

FLORIDA HIGHWAYS



Project 40-A, Road 4, Brevard County, Between Sebastian and Melbourne. Rock Base with Priming Coat.

Vol. II

MARCH, 1925

No. 4

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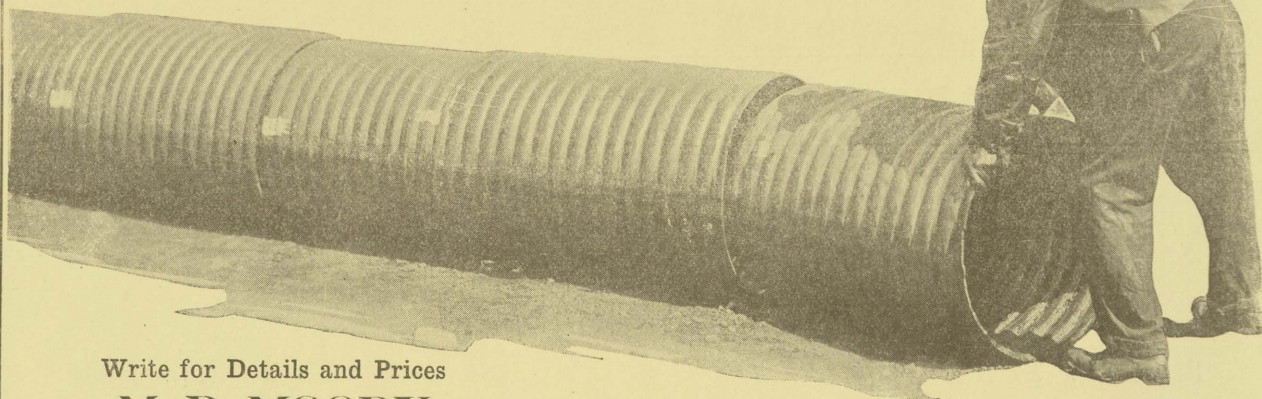
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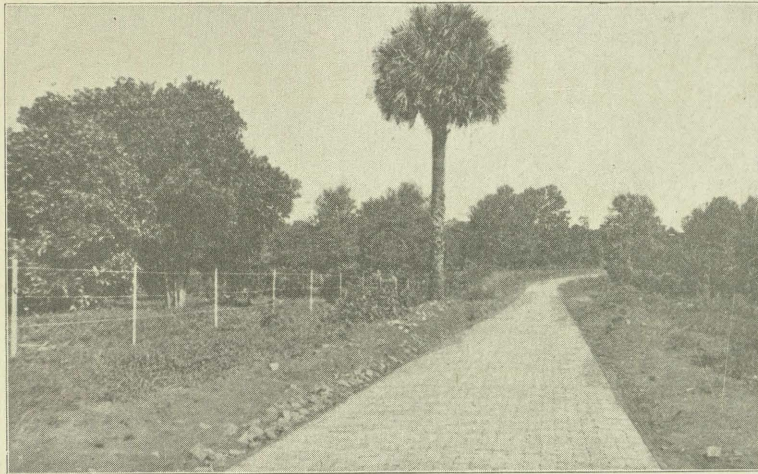
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JACKSONVILLE, FLORIDA

Entering the Pipe by Rolling in on an Angle

FLORIDA HIGHWAYS



Vol. II

MARCH, 1925

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Transactions of the State Road Department at Its Quarterly Meeting Held in Tallahassee January 15th and 16th

The first quarterly meeting of the State Road Department was held in Tallahassee, January 15th and 16th, 1925, with all members present. J. L. Cresap, State Highway Engineer, B. A. Meginniss, Attorney for Department, and Ella Creary Thompson, Secretary, were also in attendance.

The minutes of the October meeting were read and duly approved.

CHAIRMAN'S REPORT

Mr. Corry moved that the report of the chairman be received and spread in full upon the minutes and that the thanks of the department be extended to the Chairman, to the state highway engineer, officers, engineers and employees for their conscientious and efficient service and loyal and hearty support during the year 1924; which motion, seconded by Mr. Green, was unanimously adopted, each of the members, save the Chairman, declaring himself as concurring in the sentiment expressed in the resolution.

(The Chairman's report referred to appeared in full in our February, 1925, issue.—Ed).

Governor Martin, pursuant to appointment made by the Department, through its Chairman, met with the members and addressed them.

(Editor's Note.—The full text of the Governor's address was published in our February issue).

Election of Chairman, 1925

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was unanimously adopted:

Resolved, That Judge H. B. Philips be elected Chairman of the Department for the ensuing year, and the appreciation of his services during the past year is hereby expressed.

Election of Secretary, 1925

Upon motion of Mr. Corry, seconded by Mr. Green, the following resolution was unanimously adopted:

Resolved, That Ella Creary Thompson is hereby elected Secretary of the Department for year 1925.

Project 38-A

Upon motion of Mr. Schilling, seconded by Mr. Corry, the following resolution was adopted:

Resolved, That after canvassing the bids received for the construction of a bridge across Escambia

Bay, known as Project 38-A, on Road No. 1, Escambia-Santa Rosa Counties, it is found that the bid submitted by the Atlantic Bridge Company of Roanoke, Virginia, is lowest, and the Chairman is hereby authorized to accept said bid and enter into a contract with the above named bridge company at the price submitted in their proposal for the construction of said bridge.

Suwannee River Bridge—Road No. 1, Project 45

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Resolved, That after canvassing the bids received for the construction of a bridge across Suwannee River, between Madison and Suwannee Counties, on Road No. 1, known as Project 45, it is found that the bid submitted by R. H. H. Blackwell, of East Aurora, New York, is lowest, and the chairman is hereby requested to make inquiry as to the financial standing and reliability of said contractor, and upon satisfactory information, he is hereby authorized to enter into a contract with said contractor at the price submitted in his proposal. In case satisfactory report is not received, the Chairman is authorized to enter into contract with the next lowest bidder on this project; and be it further

Resolved, That in addition to the official designation of Project 45, this project be known as the "Hillman Bridge."

Project 534, Road 4

Upon motion of Mr. Schilling, seconded by Capt. Hillman, the following resolution was adopted:

Resolved, That the Chairman is hereby requested to advertise for bids for putting rock base on that portion of Road No. 24 from the Osceola County line to St. Johns River, approximately seven miles, and is hereby authorized to enter into contract for same upon receipt of bids.

Project 19, Road No. 2

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the construction of Project 19, Road No. 2, Hamilton County, be authorized and undertaken by the Department as stage construction; and be it further

Resolved, That the Chairman be and he is hereby authorized to advertise for bids for rock base on Road No. 2 from Genoa to White Springs, 8.2 miles.

Project 19, Road No. 2

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Whereas, Road No. 2 forms a part of the Federal Seven Per Cent System of Florida; and

Whereas, The State Road Department is desirous of obtaining Federal funds to aid in the construction of said road; Now, therefore, be it

Resolved, That the Chairman is hereby authorized to submit plans and specifications to the Bureau of Public Roads and make application for Federal Aid for said project; and be it further

Resolved, That this Department does hereby pledge that the necessary funds will be provided by the Department for meeting Federal funds on said proposed Federal Aid Project; and be it further

Resolved, That the State Highway Engineer be and he is hereby directed to commence the construction of said piece of road as soon as all necessary plans are completed.

Flagler County—Road No. 4

Upon motion of Mr. Schilling, seconded by Capt. Hillman, the following resolution was adopted:

Resolved, That after due and full consideration this Department is convinced that Road No. 4 through Flagler-St. Johns Counties should be built on the direct route between St. Augustine and Bunnell, as submitted by engineers of this Department on Projects 48 and 49 and recommended by the representative of the Bureau of Public Roads.

The meeting adjourned for dinner, the afternoon session convening with all members present. The afternoon session was consumed in hearing delegations.

FRIDAY SESSION, JANUARY 16, 1925

Clay County—Road No. 2

Upon motion of Mr. Schilling, seconded by Mr. Corry, the following resolution was adopted:

Resolved, That Road No. 3 in Clay County from Orange Park to Green Cove Springs be located along the River Route, the Department hereby agreeing to construct the bridge across Doctor's Lake.

Putnam County—City of Palatka

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Resolved, That a representative of the Department be present at the hearing of the War Department to be held January 19th at Palatka regarding the location of the bridge to be constructed over the St. Johns River in the city of Palatka.

Florida Public Service Company

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Resolved, That the Chairman is hereby authorized to grant to electric light and power companies, serving the public, permission to locate their lines along the public highways under such regulations and agreement as he deems practicable.

Project 562-B—W. P. Kennedy Construction Company

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the matter of allowing W. P. Kennedy, contractor, additional money for the work being done on Project 562-B, Road 8, Highlands County, be referred to the Chairman for determination.



Road 2, Marion County, near Santos. Rock Base, Surface-treated.

Requirement for Counties Turning Road Monies Over to the Department

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Be It Resolved, That in all cases where the Department undertakes to build a road or section of road based on the proposition that a county or road and bridge district furnishes a certain amount of money, that a contract shall not be let or work commenced until the county or road and bridge district deposits with the State Treasurer the amount appropriated towards the cost of construction of such road or section of road.

DeSoto and Highlands Counties

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

Resolved, That when DeSoto and Highlands Counties or either of them shall turn over to the State Road Department \$122,000.00 to be expended in the construction of State Road No. 18, between Lake Annie and Dorr Field, the Department will supplement the same (in accordance with its contract acknowledged as valid and binding at the October meeting of the Department) with \$100,000.00 of State funds, to be used towards completing said section of road.

Be It Further Resolved, That the Department will finally complete said section of road if and when permitted by law so to do.

Road No. 8—Highlands County

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the Chairman be and he is hereby authorized to make provision for the completion of the road between DeSoto City and Kissimmee River on Road No. 8.

Citrus County—Road No. 5

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Resolved, That the State Road Department pay to Frances Elizabeth Butler and J. H. Butler three hundred dollars (\$300.00) for a right-of-way for State Road Number 5 in Citrus County, Florida, over, upon and through the following described tract of land, to-wit:

A strip of land sixty-six feet wide, beginning at approximately the southeast corner of Lot seventy-one (71) in the town site of Hernando, Florida, same being a sub-division of Section twenty-six (26),



Florida Highways

Published Monthly
Official Publication of the State Road Department

PERSONNEL OF DEPARTMENT

H. B. PHILIPS, *Chairman*

W. J. HILLMAN

I. E. SCHILLING

E. P. GREEN

W. M. CORRY

ELLA CREARY THOMPSON, *Secretary*

PERSONNEL OF EMPLOYEES IN GENERAL CHARGE OF THE WORK OF THE DEPARTMENT

Engineering Division

| | |
|----------------------|--------------------------------|
| J. L. Cresap..... | State Highway Engineer |
| L. K. Cannon..... | Ass't State Highway Engineer |
| G. L. Derrick..... | Bridge Engineer |
| C. W. DeGinther..... | Ass't Bridge Engineer |
| Harvey A. Hall..... | Testing Engineer |
| F. W. Berry, Jr..... | Office Engineer |
| John R. Stewart..... | Supt. of Equipment |
| R. L. Bannerman..... | Div. Engr. 1st Division |
| M. P. Philips..... | Div. Engr. 2nd Division |
| R. J. Cassie..... | Acting Div. Engr. 3rd Division |
| L. B. Thrasher..... | Div. Engr. 4th Division |
| A. W. Kinney..... | Div. Engr. 5th Division |

Accounting Division

| | |
|-------------------------|------------|
| S. L. Walters..... | Auditor |
| Bettie V. Herring..... | Bookkeeper |
| Jewell Smith Jones..... | Bookkeeper |
| W. A. Williams..... | Bookkeeper |

This magazine is edited in the offices of the State Road Department, Tallahassee, and published monthly. Subscription rate, one dollar per year. Permission is granted to republish, with proper credit, the matter contained herein.

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B. A. Meginniss, Attorney for the Department,
Editor and Business Manager

Volume II

March, 1925

Number 4



THE 1925 BUDGET

On page 13 of this issue will be found the tentative budget of maintenance and construction work for the year 1925, as prepared by the Department under the provisions of Chapter 9312, Laws of Florida, 1923.

A public hearing of complaints and suggestions which may be advanced relative to this proposed budget will be held at Miami, March 10th, as required by the Act cited. Thereafter, the Department will adopt the final budget for the year, which then becomes its definite programme of work for 1925.

While this budget, as pointed out, is tentative, it is improbable that there will be many changes in it when finally adopted. The budget as outlined represents the careful and painstaking work of the members of the Department, and it is believed that, viewed dispassionately, it will be found to cover and include those projects most vital to the progress of Florida's road system. It is confined to work on roads 1, 2, 3, 4, 5 and 8 because the law requires these roads to be first constructed before the Department undertakes construction of any other roads. Contemplated work on other roads will, it is true, be found included in a few instances in the budget; but these are instances where the Department is either bound to a particular piece of work by contract with some county antedating the law, or where the road in question is a part of the Federal Seven Per Cent System, both of which constitute exceptions to the general provision above mentioned.

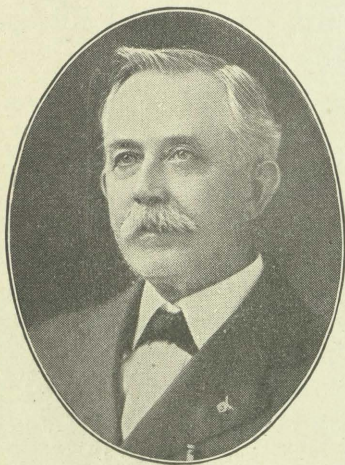
On page 20 will be found a statement of the estimated revenues of the Department for the year, also prepared under the requirements of Chapter 9312. There seems to be a popular impression in connection with this statement that it shows the amount available for new construction. None wish this were true more fervently than the Members of the Department. The fact is, however, the funds shown must take care of a great many projects, both State and Federal Aid, already under construction, contracted for or authorized. A glance at the proposed budget of work will reveal how many of these going and continuing projects there are, and how comparatively few are the entirely new projects.

The Department hopes that the public will study the budget carefully and in the light of the importance of each project shown to the State Road System, and stripped of any enthusiasm for a project which may be of tremendous local importance, but which, taken in connection with the State programme pales into comparative insignificance.

FLORIDA HIGHWAYS

The January issue of Florida Highways, a monthly issued by the State Road Department at Tallahassee, is a fine piece of work. The cover title page is a gem of colored printing. The magazine costs \$1 a year and well worth it to all interested in the roads of the State.—Florida Times-Union.

Chairman's Column



THE POLICY OF THE DEPARTMENT RELATIVE TO COUNTY FUNDS AND RELATIVE TO THE ACQUISITION OF RIGHTS OF WAY

At the session of the Road Department recently held, two resolutions were adopted which are of general interest and should be read and considered by county officials and all others interested in the matter of road building by this Department.

A resolution was adopted to the effect that in every case where road and bridge work is to be done by the Department based on the proposition that a county or road and bridge district is to contribute money in aid of such work, the money agreed to be furnished must be deposited with the State Treasurer before letting any contract for the work or before the Department commences to do the work with its own forces.

Our experience in some cases teaches us that this is the only satisfactory method of handling this proposition. It saves any question as to just how much is to be contributed, and saves the Department the annoyance and delay sometimes attendant upon the matter of collecting the amount promised. When the Department needs money to meet contractors' estimates or pay rolls it has no time to engage in correspondence and go through with the usual red tape connected with the matter of collecting funds from county officials. In one case we have finished the road, but still lack a few thousand dollars of getting the money promised. It should be said, however, that most of the county officials and the banks with which

we have dealt have been prompt in their payments and have shown a commendable spirit of cooperation and helpfulness.

In adopting this ruling we do not feel that we are placing any hardship upon the local officials or communities. The State Treasurer is a very accommodating official and will gladly co-operate with the local officials to the end that the money may be retained in the local banks if it is so desired. And then, there is a pleasing air of finality and security produced by this arrangement. The people know that their money is safe beyond peradventure and that they will get their road or bridge, as the case may be.

Another resolution adopted is to the effect that no contract is to be let or work commenced until the right of way for the entire project is secured. The work of the Department has in a number of cases been seriously complicated and delayed because of the fact that the counties have failed to get the right of way through each tract of land traversed by the the route or line of the road proposed to be built. It takes no explanation to show the justice of this rule. It is just plain common sense, that we have no business to start to build a road until all of the right of way is secured.

Here again, we will be helping the county officials. The Department requires the counties to furnish the right of way and the necessary borrow pits. They will find that it is much easier and less expensive to obtain these before the work is commenced than it is to wait until the property owner can see from the work already done, that you have just got to go through his land.

LOUISIANA HIGHWAY MAGAZINE

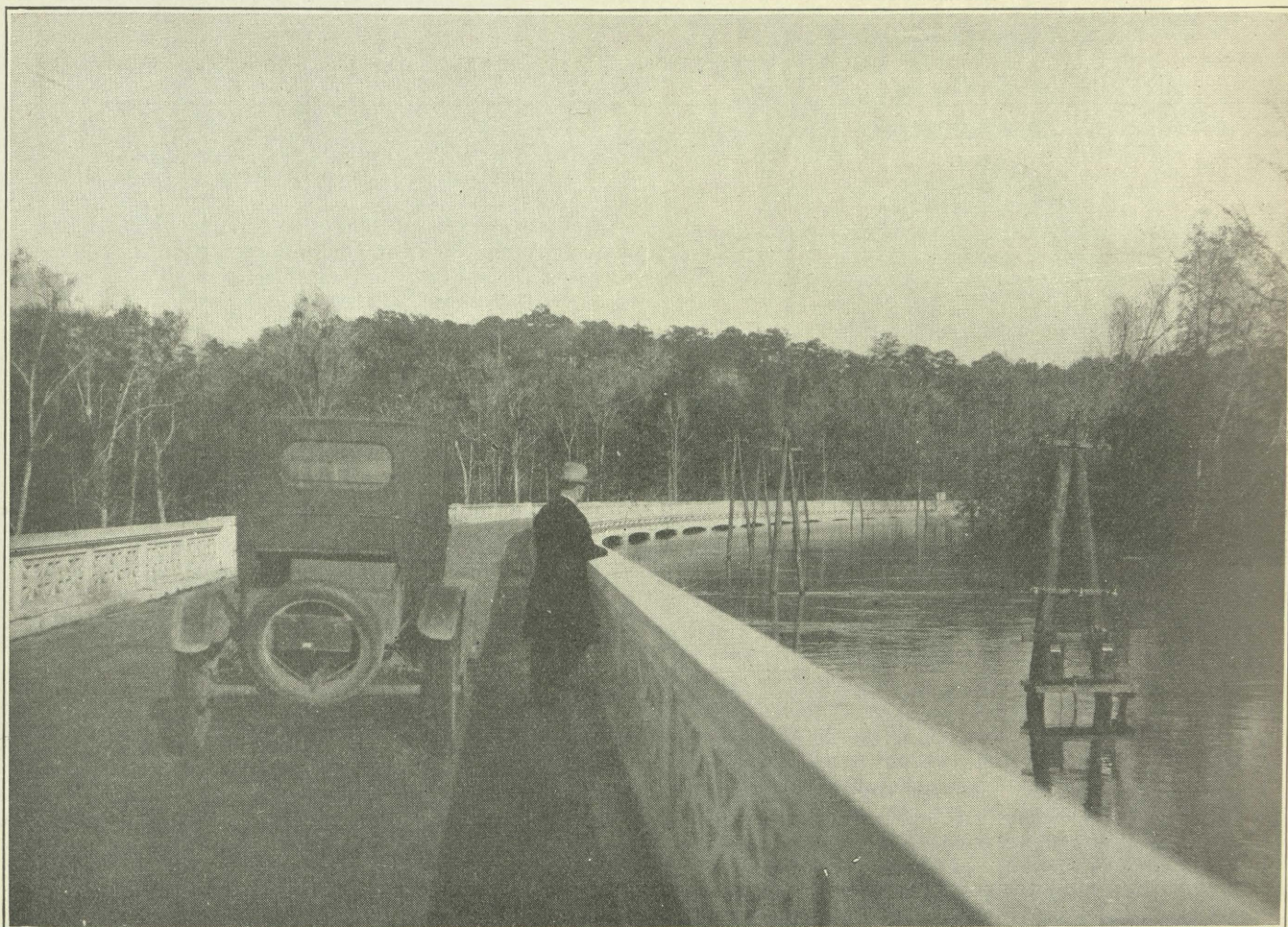
We have received the first issue of Louisiana Highway Magazine, official publication of the Louisiana State Highway Commission, and the newest member of our "family" of Highway Magazines. It is to be issued monthly at Baton Rouge.

If one may judge from the first issue, it is destined to take a prominent position in the list of road magazines which already includes some very excellent publications. The new magazine is physically attractive, interesting and readable and contains much data of value not only to the people of its own State but to all interested in highway progress.

We welcome it to our desk and wish for it a long and useful life.

Contracts Awarded by State Road Department of Florida January 1, 1925-February 16, 1925

| Contractor | Proj. No. | County | Roads | Bridgth | Contract | Type |
|-------------------------|-----------|----------------|-----------------|----------------|---------------|---------------|
| | | | Length Miles | Leng Feetes | | |
| Atlantic Bridge Co..... | 38-B | Escambia | | 1570 | \$ 289,113.77 | Conc. & Steel |
| R. H. H. Blackwell..... | 45 | Madison | | 910 | 124,902.27 | Conc. & Steel |
| Total..... | | | | | \$ 414,016.04 | |



Victory Bridge over Apalachicola River Showing Flood Waters January 22nd, 1925.

Victory Bridge

Because it did what was expected of it—because it withstood without apparent effort the greatest flood ever known on that river, but little publicity has attended the passage of Victory Bridge spanning the Apalachicola River through the raging, swirling flood waters which but few miles farther north in Georgia swept everything before them late last month. The days were not without their meed of anxiety—not because of any suspected weakness in the structure itself, but because of the tremendous drift which had to be handled and passed safely by the bridge.

Under direct personal supervision of Division Engineer Robert L. Bannerman, forces of the State Road Department augmented by men from the State Hospital worked night and day to keep this drift moving. How well this work was done is attested by the fact that now, when the waters have to a large extent subsided, it is gratifying to know that the structure is not even scarred.

We are presenting herewith three photographs taken when the water was at its crest. They portray more graphically than we could possibly describe conditions as they existed at that time, but even these

cannot give an adequate idea to those unfamiliar with normal conditions.

It should be remembered that the Apalachicola river is formed by the confluence of both the Flint and Chattahoochee rivers, and the bare reminder of what these swollen streams did to the country bordering them in Georgia will give some conception of the volume of water the bridge had to withstand. It is not generally known, but is true, that the Apalachicola drains a greater area than any river flowing into the Gulf of Mexico east of the Mississippi. Add to this the fact that the water in the late flood rose five feet higher than it did at the time of the "Catts-Knott flood" (popularly so-called) in 1916 and you have a better idea of its extent.

It seems almost incredible when one looks at the photographs here shown that at mean water the bridge normally stretches forty feet above the surface of the river.

Many and amusing were the wild rumors current in Tallahassee and the section adjoining the bridge. One day it was reported that one of the approaches had been swept away; the next that one of the piers had moved some inches from the perpendicular—and so on ad infinitum. The fact is, no damage of any sort resulted.

College Scholarship Offered Students for Best Essay on Roads

SIXTH ANNUAL COMPETITION OPEN TO HIGH SCHOOLS IS ANNOUNCED BY HIGHWAY EDUCATION BOARD

University of Florida Is Cooperating Agency In State—Firestone Is Donor of Award

Washington, D. C., Feb. 16.—An offer of four years at college with all expenses paid is contained in the announcement made here today by the Highway Education Board of the sixth annual good roads essay contest, in which all high school students are eligible to compete.

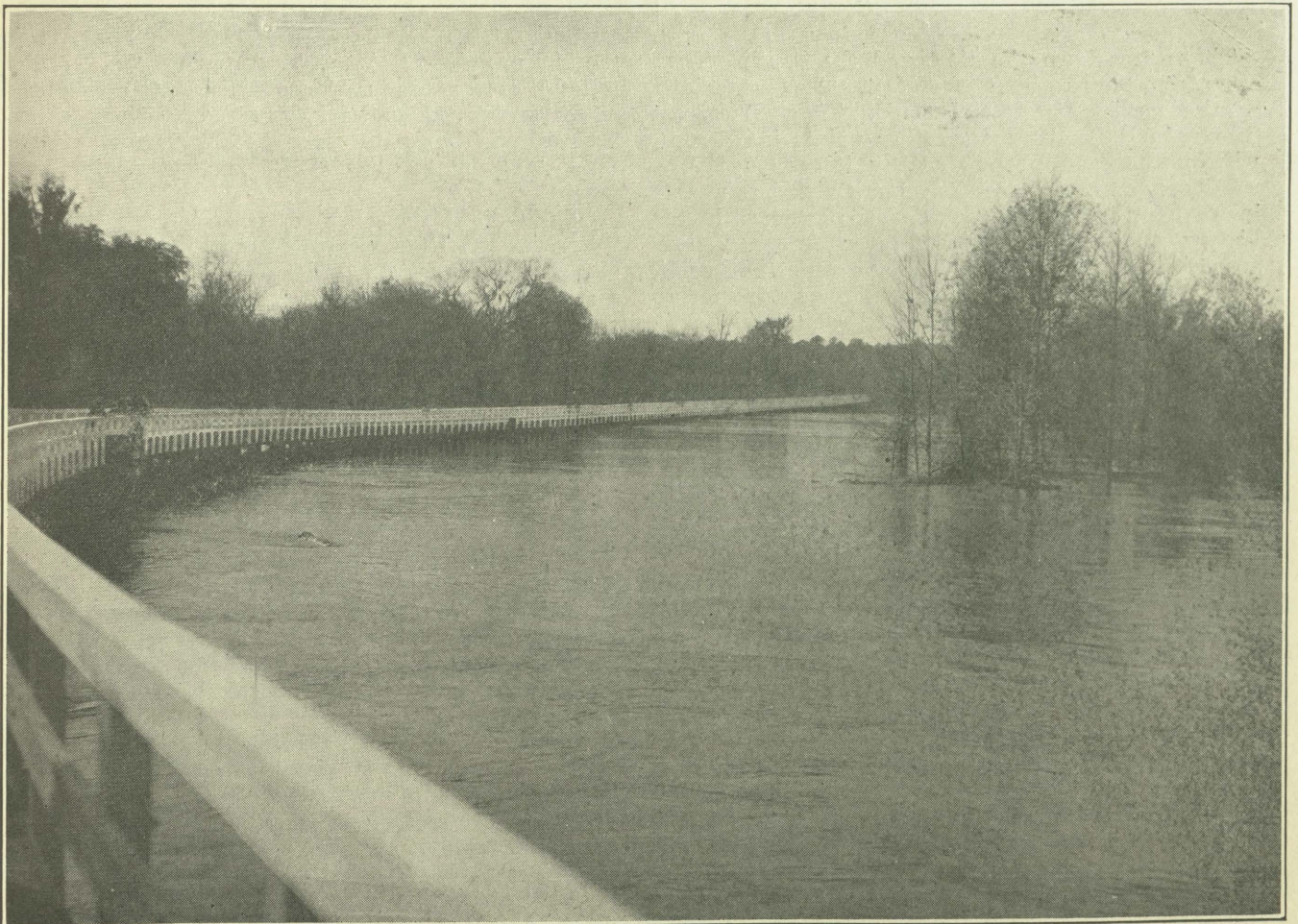
In line with administration policies tending toward economy students are being requested to write essays on the subject "Economies Resulting from Highway Improvement," having in the two preceding years written papers on subjects dealing with highways and religion and highways and home life.

The contest in the various states usually is sponsored by one of the leading universities or the state department of education. In Florida the cooperating agency is the general extension division of the University of Florida at Gainesville, which will aid in the announcement of the contest, and at its term-

ination will name competent judges to determine the best essay from that state. The best three essays from each high school are to be sent there for review.

The principal prize is a four years university scholarship, offered by H. S. Firestone, of Akron, Ohio, a member of the Highway Education Board, of which the U. S. Commissioner of Education, Dr. J. J. Tigert, is chairman. This scholarship, which in the past five years has been won by three young women and two young men, provides that the successful contestant may attend any college or university in the United States, with tuition, room, board, books and special fees paid by the donor. It is said to be the largest single educational award offered in this country and its estimated value to the winning student is approximately \$1,000 annually, or at least \$4,000 for the four years.

Many state awards are offered by the cooperating



West Approach to Victory Buridge During the High Water January 22nd, 1925.

organizations including tuition scholarships, cash prizes, loving cups and medals.

By educational authorities this annual competition among high school students, started in 1920, is declared to have been the first essay contest to assume national proportions. It annually attracts approximately a quarter of a million contestants, the number who submit essays depending upon the nature of the subject. Entire high schools often participate as part of their school duties. Essays are received from every state in the Union, while many of the best come from outlying territories and possessions, such as Alaska, Hawaii, the Philippines, Porto Rico and the Canal Zone.

The award in 1924 went to John Liska, a Wisconsin high school student, whose subject was "The Relation of Improved Highways to Home Life." The first winner, Miss Katharine Butterfield, of Weiser, Idaho, was graduated last year from Northwestern University, near Chicago. Other successful students were Miss Garland Johnson, Bridgeport, West Virginia, 1921; Karl G. Pearson, District of

Columbia and Lindsborg, Kansas, 1922, and Miss Dorothy Roberts, Harlan, Kentucky, 1923. With the exception of Liska, all of these students are in college, and he will enter when he has completed his high school course.

Rules of the contest do not limit participation to high school seniors, but provide that any student attending high school may submit an essay. No other conditions, except those governing the preparation of the paper itself, are provided. Essays must not exceed 700 words in length and must be handed school principals or teachers not later than May 1, 1925. Selection of the best essay is by a process of elimination.

Complete information will be forwarded each person who inquires of the Highway Education Board, Willard Building, Washington, D. C.

The best essays of previous years have been collected in pamphlet form and are available for distribution. These booklets may be found in most libraries, or had upon request to the Board.

American Road Builders in War on Mud

A Future Visioned Wherein Permanent Highways Will Make Present Remote Districts Accessible, and Bring Distant Farming Communities Into Close Touch With Cities and Towns

By EDWARD JEROME DIES, in *Manufacturers Record*

They came from the East and the South. They came from the North and the West. They came from South America and from Canada. They came from Sweden and Scotland and other points in Europe. Fifteen thousand persons vitally interested in the world war on mud descended upon Chicago this week in, perhaps, the greatest good roads conclave in the history of mankind. Spread over acres of floor space in the vast Chicago Coliseum were the ingenious implements of battle. They ranged from tiny scientific instruments to gigantic Frankenstein monsters whose magic touch transforms gashed and gutted trails into white-ribbon roads.

And it is this growing network of white-ribbon roads that is linking farm and market. It is this intricate patchwork of arteries through which is flowing a greater and greater commerce. No stretch of the imagination is required to see the resident of the most isolated farm house stepping into his motorcar and driving to any other point in the nation without leaving the modern roadbed. Such a day is inevitable, say the leading authorities, and such a day is not far distant; for America's rapid progress in road building, despite desultory criticism to the contrary, stands today a shining example of our national development.

Crowds heard such messages forcibly delivered by speakers at the twenty-second annual convention of the American Road Builders' Association. Other crowds, numbering in the thousands, milled about the field of road-making paraphernalia. They saw 300 car-loads of steam shovels, steam rollers, tractors, concrete mixers and scrapers spread out before them on a single floor. They saw many of these modern implements touched into action by some of

the 300 exhibitors. All went away convinced of the colossal good roads program that is being ably pushed forward to the material advantage of every American citizen. Estimates showed 450,000 miles of surfaced highway to some 18,000,000 automobiles and trucks.

"In 10 to 25 years," predicted George T. Tillson, "America will have one great network of roads, with enough for everybody. The dreaded road hog will disappear. So will dangerous crossings, because the roads of that time will go over each other, instead of intersecting. Connecting from the suburbs to the city and back will be done by busses in 1935 or 1950. Railroads are already admitting the inroads made into their short haul."

"The question, when that day comes," Mr. Tillson continued, "will not be one of building new roads, but of maintaining those already built. There will be no quitting for the road builder, though he'll be as busy, if not busier, repairing the roads than he is now in building them," the speaker predicted.

"Many states have some fine roads, as good as any in the country," he went on, "but, unfortunately, they don't go anywhere, because of the politics mixed up in their building. Politics is a poor road designer."

Other speakers likewise trained bitter shafts upon politics as an enemy of highway construction, citing specific instances of protracted delays. In many cases, graft is at the bottom; in other cases, jealousies, haggling and carping criticism are the cause of trouble.

Thomas H. MacDonald, chief of the bureau of public roads, traced the growth of the good roads movement, indicated the needs of the future and then told of a few things that had already been accom-



Another Photograph of Victory Bridge Taken During the Flood Which Prevailed the Latter Part of January.

plished. He said, for instance, that if the Federal-aid roads of the United States completed during the last year, or under construction, were placed end to end, beginning at New York and running westward, they would circle the globe and would overlap enough to stick out into the Pacific Ocean to a point about 1000 miles northeast of Honolulu. But, he warned, the extensive road system is no excuse for any cessation in road building. In fact, the natural growth of the nation, with the ever-increasing requirements of commerce, agriculture and society in general, make it imperative that highway construction continue full speed ahead.

"Traffic has developed overnight," he declared; "the undertaking is now only well begun. In many areas of dense population the utilization of highway transport has been slowed down and the normal and entirely justifiable use of the motor vehicle definitely curtailed."

The chief benefit of the Federal-aid system has been the creation of a definite plan for the future, Mr. MacDonald said. Such a plan of major highways has been established, he said, which looks into the future for more than 10 years for its initial completion and a quarter of a century for its detailed perfection.

Charles M. Upham, state highway engineer of North Carolina and director of the Highway Research Board in Washington, told the 1000 delegates that the United States is slowly digging itself out of

the ruts that successive generations beat into mud with their buggies and spring wagons.

"The concrete highway is here to stay until something better has been evolved," said Mr. Upham. "We must have more and more good roads as the inclination of people to have a better road grows. The farmer in the back country is no longer satisfied to jolt his way for a mile before he strikes the well-paved highway. He wants his cross-road and country lane in concrete. The mud is being transferred back to the potato fields, where it will be of use."

Former Governor Edwin P. Morrow of Kentucky, member of the United States Railroad Labor Board, was the principal speaker at a banquet.

"The roads of the country are not a liability, but an asset," he said. "I have begun to believe that half of every dollar spent for education and for religious purposes in Kentucky has been wasted because of poor roads. Law and religion have waited on the highway."

The ideal super-highway—with elevated surface for high-speed traffic, depressions for low-speed vehicles, and graveled sections for temporary stops for changing tires, etc., was described by Edward N. Hines, chairman of the board of Wayne county (Detroit) road commissioners. Speaking on "Today's Planning for Tomorrow's Highway," he said, that was exactly what his organization has been doing for the last few years.

"There are 2,800,000 miles of roads of every

description in the United States," Mr. Hines said, "but only 300,000 miles may be properly called automobile roads. Judging by the 1923 showing, the statistics for 1924 probably will show a total registration of over 17,000,000 automobiles in the country. This would mean one automobile for every 100 feet of highway, which is a very congested situation."

According to Mr. Hines, the present Detroit highway-building plans call for one or more levels at intersections to eliminate interference, the separation of high and low-speed traffic and co-operation with the rapid-transit system of the city as part of the main planning.

Many highway projects were dealt with in a report submitted by the association to the convention. There is the Pacific highway in California, the new bridge over the Savannah River, making a new route to the South, and another new bridge over the Raritan River in New Jersey, called the Victory bridge.

"In every part of the country, roads are being built, and there is hardly a state which is not engaged in some notable highway project," the report reads. "In Utah, the State is building, with the assistance of Federal aid, a highway across the Great Salt desert, known as the Wendover road. An unusual feature of this project is six miles of construction extending across the salt beds, which are subject to flooding to a considerable depth. The depth of the salt varies, but averages about three feet. The embankment for this section of road was made by a trenching machine. Wooden culverts through the embankment are used to equalize the water level on both sides at the time of year when the salt beds are flooded."

Anton S. Rosing, an official of the Armeo Culvert and Flume Manufacturers' Association, offered a

suggestion for the immediate relief of traffic congestion on main highways. He proposed proper drainage of secondary roads for lighter traffic, which, he asserts, will divert sufficient short-run and light traffic from the arterial highways to enable rapid transportation on through roads.

"The great need in America today is more highway facilities," he said. "Existing trunk lines are crowded to the limit and traffic is increasing daily."

J. H. Cranford, president of the association, who presided at the sessions of the convention, declared that the Coliseum has proved altogether too small to house the great collection of road building machinery that is seeking admittance. If the situation is the same next year, it may be necessary to seek some other city for the convention show.

Engineers estimated the value of the machinery on exhibit at \$2,000,000, or 50 per cent more than has ever been exhibited before. If organized and put to work today, the machines could finish a concrete road between Chicago and New York by April 1, the engineers said. This is striking evidence of the growth of the show and of the whole good-roads movement.

William H. Connell, engineering executive of the Pennsylvania State Highway Department, was elected president for next year. Vice-presidents are: W. S. Kelley, S. F. Beatty and Samuel Hill. Other officers: James H. MacDonald, treasurer, and C. M. Upham, manager of next year's convention and show.

Highway commissioners from nearly every state in the Union attended the big convention and exchanged data on the latest methods of hard-road construction.

Folke L. Grange, a contractor of Stockholm, Sweden, was one of the most active foreign delegates and gave the convention a vast fund of information regarding road building in Europe.

\$183,600,000 the Value of Road and Bridge Contracts South in 1924

Road and bridge contracts awarded in the sixteen Southern states in 1924 amount to more than \$183,600,000, compared with awards for the preceding year of \$174,640,000, and with \$157,110,000, the valuation of contracts in 1922.

These figures, representing the value of contracts awarded, are obtained from items published in the Daily Bulletin and in the construction columns of the Manufacturers Record, and do not include individual projects involving the expenditure of under \$10,000, nor has any attempt been made to estimate the cost of projects for which no figures were available. It is quite safe to estimate that the total of awards for all classes of road, paving and bridge work in the sixteen Southern states during 1924 is approximately \$300,000,000.

Preliminary announcements on contracts to be let during the year aggregated \$178,620,000, compared with \$194,000,000 and \$192,000,000, representing proposed work announced in 1923 and 1922, respectively.

The figures on actual awards show that road and bridge building in the South has increased steadily during the past three years. The summarization of

road and bridge building items from the construction columns of the Manufacturers Record, and published elsewhere in this issue, also evidences the steady growth of this class of work.

In August of this year contracts totaling more than \$21,100,000 were let, placing that month first in the amount of money involved. The number of construction items published in July was greater than in any previous month, and the big total of lettings in August was predicated upon these announcements. July with \$21,014,000 in awards was second, and May ranked third with a total of \$20,992,000 in contracts awarded.

During the last quarter of the year the value of awards exceeded \$43,000,000, indicating something of the big amount of such work to be undertaken in 1925. For, in addition to the construction under way on projects started last year, many of which will not be completed until next summer, construction will begin as soon as weather conditions permit on many projects contracted for during November and December, 1924. In December alone the awards totaled more than \$18,683,000.



Project 40-A, Road 4, Brevard County, Between Sebastian and Melbourne. Rock Base with Priming Coat.

Announcements of contracts to be awarded, made in January, 1924, represented a contemplated expenditure of \$22,700,000. Similar announcements in June amounted to \$19,270,000, and in October to \$17,924,000.

Thus, there is abundant evidence to indicate a continuation of the road and bridge building program in the South during 1925. With vigorous campaigns under way for the voting of additional bonds in those states about to exhaust available sums from this source and by other states that have not yet approved the issuance of bonds for highways, the way is being paved for steadily pushing the improvement program until each state shall have a network of improved roads and bridges throughout its length and breadth.

COMPARATIVE RECORD OF ROAD AND BRIDGE CONSTRUCTION SOUTH—1924.

| | Contracts awarded | Contracts to be awarded |
|-----------------|----------------------|----------------------------|
| January | \$11,586,941 | \$22,712,799 |
| February | 14,674,985 | 14,074,744 |
| March | 11,394,005 | 11,756,981 |
| April | 15,311,567 | 17,668,934 |
| May | 20,992,403 | 19,271,374 |
| June | 11,256,090 | 13,947,622 |
| July | 21,014,308 | 10,764,736 |
| August | 21,109,885 | 10,933,440 |
| September | 13,021,248 | 8,590,635 |
| October | 13,386,908 | 17,924,218 |

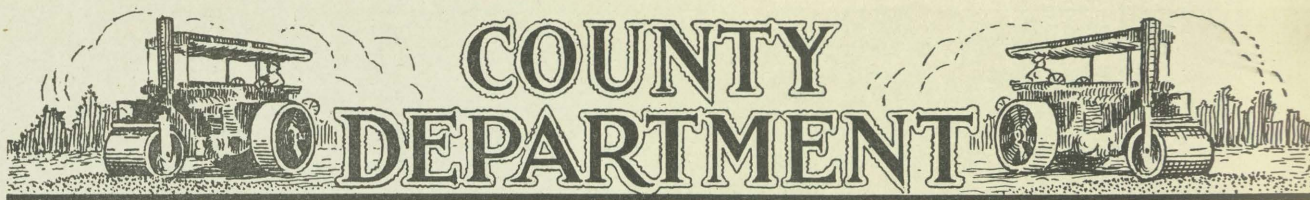
| | | |
|-----------------|---------------|---------------|
| November | 11,249,327 | 14,248,861 |
| December | 18,683,871 | 16,367,333 |
| Total 1924..... | \$183,681,538 | \$178,261,677 |
| 1923..... | 174,647,797 | 194,072,530 |
| 1922..... | 157,119,589 | 192,338,574 |

—Manufacturers Record.

STAY IN THE ROAD

Do setbacks put you forward,
Or do they send you back?
Do obstacles along life's road
Cause you to leave the track?
The road builder encounters rocks
But watch and you'll observe,
His course is laid, he follows it;
And nothing makes him swerve.
His business is to build a road;
All that he wants to know
Is where this road is leading to,
And that's where he will go.
An obstacle encountered,
Of course, will cause delay;
Yet once laid out, it's up to him,
To clear the right of way,
Lay out your course and stick to it,
Don't kick about your load;
Decide where you are headed for,
And then stay in the road.

—Texas Highway Bulletin.



Beautification of County Highways

Hillsborough County is among the first counties in this State to show marked activity in the beautification of its highways. Here the work is making rapid strides under the direction of the Hillsborough County Beautification Commission, an organization which came into being early this year, sponsored by the Tampa League of Women's Clubs and the Tampa Junior Board of Trade.

One of the most effective and inexpensive improvements so far accomplished has been the taking down of the small tin and wooden signs that pepper the fences and trees along the rights of way of the county highways. More than 1,000 of these signs have already been removed, and the rest will soon disappear. It is hoped that Hillsborough County's step in this direction will culminate in a state-wide movement for the elimination of these signs. Already the effect of this action, due to the publicity given it, can be seen in other sections of the State.

Plans are now under way for the beautification of one mile of highway on one of the main arteries leading out of Tampa. This will serve to demonstrate the Commission's conception of the ideal highway, and will at the same time show the public just what kind of results can be accomplished by the Commission's effort. Five miles of highway in a more remote part of the county have been improved by means of whitewashing the fences and the planting of vines

along the way, the property owners having given their assistance in this. On another highway, nearer the city of Tampa, the property owners purchased 500 palm trees, and the Commission met the expense of planting and supervised the work. The President of the Commission has donated \$1,000 worth of palm seed to his organization, and several prominent citizens have promised to make other donations of this kind as soon as the need for them arises.

The County Commissioners are in full accord with the program and have assisted to the extent of preparing the shoulders of the highways for the planting of shrubs, and by making allowances for this on new roads under construction. It is also believed probable that the county will make an appropriation in its budget for the coming year to help defray the heavy expenses of the Beautification Commission, which at the present time is dependent for its income on the \$1 per year dues of its 600 members.

Thus far the Commission feels that it has fully justified its existence, and with the support of the county as already demonstrated, we feel confident of success in the comprehensive program which has been undertaken.

J. R. COLHOUN,

Secretary, Hillsborough County Beautification Commission. (Reprinted from "The American City.")

The House By the Side of the Road--A Parody

(With Apologies to Sam Walter Foss)

"I would live in a house by the side of the road
And be a friend to man;
I would rise from my bed in this humble abode
To pass him my gasoline can.

"I'd awake from my sleep at all hours of the night,
My trusty team I'd hitch
To his broken machine in its sorrowful plight
And haul it from the ditch.

"The tools that I've bought with my dearly earned pelf
I'd loan this friend of mine,
Tho' he lose them, or break them or keep them himself—
And thinks it a joke that's fine.

"Yet this man that I've labored to keep from all harm

Will come some autumn day
And steal every walnut I have on my farm
If I chance to be away.

"He pilfers my chickens I've raised with such care;
With my apples his auto he lines;
On my buildings and shade trees and 'most everywhere
He tacks his horrible signs.

"He will camp on my lawn to partake of his lunch
And strew around his trash,
He will open my gates and my cows in a bunch
Adown the road will dash.

"And if so in a house by the side of the road
I have to spend my days
I would like while I live in this humble abode
The rule to work both ways."

—Mable Wiley Howard, in Michigan Roads and Pavements.

BUDGET OF MAINTENANCE and CONSTRUCTION WORK FOR 1925

CONSTRUCTION FEDERAL AID PROJECTS Work Under Construction

| Road No. | Proj. No. | COUNTY | LOCATION | Length |
|----------|-----------|-----------|-------------------------------|--------|
| 1 | 38-A | Escambia | Escambia Fill | 3.20 |
| 1 | 20 | Holmes | Choctawhatchee River Bridge | |
| 2 | 26 | Columbia | Lake City to White Springs | 10.99 |
| 2 | 37-A-C | Alachua | Gainesville to Paynes Prairie | 4.16 |
| 2 | 37-D | Alachua | Paynes Prairie | 2.14 |
| 2 | 37-E | Alachua | Paynes Prairie to Marion Co. | 7.96 |
| 2 | 43 | Marion | Ocala to Lowell | 10.44 |
| 2 | 44 | Lake | Marion Co. to Leesburg | 10.74 |
| 4 | 36-A | St. Lucie | Vero to Wabasso | 7.76 |
| 4 | 36-B | St. Lucie | Wabasso to Sebastian River | 7.12 |
| 4 | 39-A-B | Brevard | Sebastian River Bridge | .17 |
| 4 | 40-A | Brevard | Sebastian River to Melbourne | 16.17 |
| 4 | 40-D | Brevard | Titusville—south | 6.72 |
| 4 | 40-E | Brevard | Titusville to Volusia Co. | 13.60 |
| | | | Total | 101.17 |

Work Authorized But Not Under Construction

| | | | | |
|----|------|-----------|--------------------------------|--------|
| 1 | 38-B | Escambia | Escambia Bay Bridge | .30 |
| 1 | 45 | Suwannee | Suwannee River Bridge | .17 |
| 2 | 7 | Hamilton | Jennings to Jasper | 13.00 |
| 2 | 19 | Hamilton | Genoa to White Springs | 8.20 |
| 2 | 31 | Hamilton | Genoa to Jasper | 11.86 |
| 2 | 37-B | Alachua | Underpass S. of Gainesville | .37 |
| 2 | | Lake | Leesburg to Silver Lake Fork | 3.50 |
| 3 | 46 | Nassau | St. Mary's River—South | 11.52 |
| 3 | 421 | Nassau | St. Mary's River Bridge | .13 |
| 4 | 41 | Dade | Miami to Broward Co. | 11.78 |
| 4 | 47 | St. Johns | Duval Co. to St. Augustine | 14.88 |
| 4 | 48 | St. Johns | St. Augustine to Pellicers Ck. | 15.68 |
| 4 | 49 | Flagler | Pellicers Ck. to Bunnell | 13.40 |
| 14 | 643 | Putnam | Palatka to Alachua Co. | 25.00 |
| | | | Total | 129.79 |
| | | | | 230.96 |

STATE PROJECTS Work Under Construction

| | | | | |
|---|--------|------------|-----------------------------------|-------|
| 1 | 571 | Madison | Greenville to Madison | 14.73 |
| 1 | 586 | Jackson | Marianna to Chipley | 17.37 |
| 1 | 598-A | Jefferson | Aucilla River to Monticello | 9.45 |
| 1 | 598-B | Jefferson | Monticello—West | 7.80 |
| 1 | 634 | Jackson | Marianna—11 miles East | 11.14 |
| 1 | 567 | Walton | Argyle to Crestview | 21.35 |
| 1 | 612 | Leon | Tallahassee—East | 17.58 |
| 1 | 514 | Jackson | Chattahoochee—11 miles West | 11.00 |
| 1 | 638 | Santa Rosa | Black Water R. Bridge to Proj. 14 | .50 |
| 2 | 599 | DeSoto | Carlstrom to Charlotte Co. | 7.00 |
| 2 | 622 | Lake | Proj. 44 to Leesburg | .22 |
| 2 | 553-B | Marion | Underpass S. of Ocala | |
| 3 | 588 | Putnam | Crescent City | 2.14 |
| 3 | 627 | Putnam | E. Palatka to Dunn's Creek | 5.70 |
| 3 | 628-D | Volusia | Orange City to St. Johns R. | 6.47 |
| 3 | 595-B | Volusia | DeLand to End of Brick N. | 1.00 |
| 3 | 575 | Putnam | Sisco to Dunn's Creek | 5.46 |
| 4 | 521 | Nassau | Proj. 32 to Georgia Line | 12.41 |
| 4 | 597 | Volusia | New Smyrna to Brevard Co. | 16.24 |
| 4 | 601 | St. Johns | Bridges at Hastings | |
| 4 | 604 | Volusia | Rose Bay to New Smyrna | 7.72 |
| 4 | 608 | Brevard | Melbourne—North | 9.29 |
| 4 | 620 | St. Lucie | Bridge at Vero | .01 |
| 5 | 544-AB | Pasco | Hillsboro Co. to Hernando Co. | 20.08 |
| 5 | 545 | Hernando | Brooksville to Pasco Co. | 9.15 |
| 5 | 564-A | Charlotte | Punta Gorda—North | 10.88 |
| 5 | 576 | Sarasota | Myakka R. to Charlotte Co. | 5.68 |
| 5 | 593 | Manatee | Manatee River Bridge | 1.00 |
| 5 | 613 | Sarasota | Manatee Co. to Sarasota | 4.62 |
| 6 | 560 | Calhoun | Canal to Wewahatchka | 19.00 |
| 6 | 651 | Calhoun | Port St. Joe to Franklin Co. | 16.00 |
| 8 | 582 | Okeechobee | Kissimmee River Bridge | .59 |

CONSTRUCTION Work Under Construction—(Continued)

| Road No. | Proj. No. | COUNTY | LOCATION | Length |
|----------|-----------|------------|-------------------------------|--------|
| 8 | 605 | Polk | Haines City to Frostproof | 21.00 |
| 8 | 630 | Highlands | Kissimmee R.—11 miles West | 11.00 |
| 8 | 636 | St. Lucie | Okeechobee to Ft. Pierce | 12.80 |
| 8 | 523 | Okeechobee | Okeechobee to Kissimmee River | 8.25 |
| 9 | 574 | Madison | Madison to Georgia Line | 11.66 |
| 10 | 637 | Leon | Tallahassee to Georgia Line | 18.08 |
| 10 | 646 | Franklin | Ocklocknee R. to Carrabelle | 18.50 |
| 13 | 572 | Bradford | Starke to Lawtey | 7.00 |
| 13 | 607 | Bradford | Starke to Highlands | 5.10 |
| 13 | 607-B | Bradford | Highlands to Duval Co. | 5.68 |
| 19 | 580 | Dixie | Oldtown to Suwannee River | 2.67 |
| 24 | 534-A | Brevard | Sta. 308 to 448 | 2.65 |
| 24 | 534-B | Brevard | Melbourne to Osceola Co. | 14.07 |
| 29 | 518 | Lafayette | Mayo to Bransford | 15.00 |
| 35 | 623 | Madison | Greenville to Taylor Co. | 12.13 |
| | | | Total | 437.17 |

PROPOSED PROJECTS

Work Not Under Construction

| | | | | |
|-----|---------|------------|--------------------------------|--------|
| 1 | | Leon | Tallahassee to Quincy | 24.00 |
| 1 | 633-639 | Gadsden | Chattahoochee to Quincy | 19.43 |
| 1 | 631 | Holmes | Chipley to Caryville | 21.00 |
| 1 | 621 | Okaloosa | Walton Co. to Milligan | 15.17 |
| 1 | 651 | Escambia | Pensacola to Proj. 38 | 10.00 |
| 2 | 573 | Orange | Plymouth to Osceola Co. | 34.00 |
| 2 | 648 | Hardee | Bowling Green to Brownsville | 22.00 |
| 2-A | | Lake | Leesburg to Helena Run | 3.50 |
| 3 | 628-A | Volusia | DeLand to end of Brick S. | 2.08 |
| 3 | 628-B | Volusia | End of brick to Orange City | 1.46 |
| 3 | 628-C | Volusia | Through Orange City | 1.99 |
| 3 | 642 | Putnam | Palatka to Clay County | 10.20 |
| 3 | 595-A | Putnam | End of brick to DeLeon Springs | 6.43 |
| 3 | | Clay | Putnam Co. to Duval Co. | 30.00 |
| 4 | | Palm Beach | Loxahatchee River Bridge | |
| 4 | 640 | Palm Beach | Stuart to Jupiter | 21.05 |
| 4 | | Palm Beach | Jupiter to West Palm Beach | 14.00 |
| 4 | | Brevard | Sharps to Bonaventure | 12.00 |
| 4 | | St. Lucie | Vero to Palm Beach Co. | 36.00 |
| 4 | | Palm Beach | West Palm Beach to Broward Co. | 30.00 |
| 4 | | Broward | Palm Beach Co. to Dade Co. | 22.00 |
| 5 | 581 | Hillsboro | Six Mile Creek to Proj. 510 | 12.10 |
| 5 | 614 | Sarasota | Sarasota to Venice | 17.07 |
| 5 | 625 | Citrus | Holder to Inverness | 10.86 |
| 5 | 626 | Citrus | Inverness to Floral City | 6.61 |
| 5 | 617-618 | Alachua | High Springs to Archer Dist. | 16.06 |
| 5 | | Citrus | Dunnellon to Holder | 6.45 |
| 5 | | Citrus | Floral City to Hernando Co. | 7.00 |
| 5 | | Hernando | Citrus Co. to Brooksville | 7.00 |
| 5 | | Sarasota | Venice to Myakka River | 10.00 |
| 5 | | Sarasota | Myakka River Bridge | |
| 5 | | Charlotte | Punta Gorda to Acline | 7.00 |
| 6 | 652 | Jackson | Marianna to Alabama Line | 18.00 |
| 7 | | Escambia | Quintette to Pine Barren | 6.20 |
| 8 | 647 | Highlands | Proj. 629 to Proj. 630 | 7.00 |
| 8 | | Highlands | DeSoto City to Lake Stearns | 11.00 |
| 8 | 629 | Highlands | Lake Annie—6 miles East | 6.00 |
| 9 | | Gadsden | Quincy to Georgia Line | 6.00 |
| 18 | | Highlands | Camp Dorr to Lake Annie | 19.00 |
| 27 | | | Miami to Marco | 98.00 |
| | | | Total | 607.66 |

MAINTENANCE

Maintenance of Roads Included in Above Construction Budget and Roads Heretofore Constructed

| | |
|------------|---------|
| Division 1 | 343.94 |
| Division 2 | 306.65 |
| Division 3 | 150.75 |
| Division 4 | 281.50 |
| Division 5 | 192.20 |
| Total | 1275.04 |



Federal Aid Project 37-E, Road 2, Alachua County near Micanopy. Sheet Asphalt on Lime-rock Base

Southern States Making Rapid Progress in Highway Construction and Improvement

Reports from the state highway departments of the sixteen Southern states indicate that under their direction upwards of \$170,000,000 in funds are available for new road and bridge construction in 1925. These figures do not include the cost of projects which will be undertaken by the counties but are for exclusively state road work, and it is conservatively estimated that the county funds for highway improvements are equal to and in many cases exceed the funds available for state work. Large sums will also be expended for paving in cities and towns. The hundreds of new sub-divisions and residential developments being opened up in all parts of the South will result in the expenditure of additional big sums for street improvements. Thus, \$400,000,000 is not an overestimate of the amount of money required in the South this year for improved highways.

Bonds are being voted in steadily increasing amounts by towns, cities and counties in all parts of the South to carry forward the program of improved roads and streets. States that have authorized big issues and have witnessed the general prosperity and

advancements resulting from improved transportation facilities are already considering voting additional bonds. Several states that have approved large bond issues have taken steps to make this money available more quickly than the original plans called for, thus insuring the completion of the main arteries of highways at the earliest possible date.

The gasoline tax, one of the most satisfactory methods of raising funds for highway purposes, has been adopted by every state in the South. The tax ranges from one to four cents on a gallon, the last named figure being for the state of Arkansas. An ever-increasing revenue will be available for maintenance and new construction from this tax.

Legislatures now meeting in some of the states are expected to make available additional funds at an early date through authorization of bond issues. With vigorous campaigns under way in other states for highway bonds, the way is open for pushing improvement programs until each state shall have a network of improved roads and bridges throughout its length and breadth. The construction of main

highway arteries of state highway systems between main centers of population and connecting with those from other states features the development now under way.

One of the chief duties that claimed the attention of the Texas Highway Department during last year was the maintenance of all state highways, improved and unimproved, carrying out the provisions of the new highway law passed in 1923. In eleven months ending November 30 \$3,800,000 was expended for actual maintenance and \$600,000 worth of equipment was purchased. Kentucky built 400 miles of improved highways last year costing \$10,000,000 and will expend \$7,000,000 for 300 miles of similar roads this year.

South Carolina had under maintenance on December 1 a total of 3394 miles of highways, having opened during the year 700 additional miles. Its last year's program involved the expenditure of \$5,000,000 for maintenance and new construction, and approximately \$7,000,000 is available for 1925. More than \$30,000,000 in road projects are under contract in Missouri and \$26,600,000 worth of contracts have been completed. Contemplated work for this year includes 400 miles of hard surfacing, 700 miles of gravel and 1000 miles of graded roads. More than 190 grade crossing have been eliminated. In November voters authorized a gasoline tax of two cents per gallon, a 50 per cent increase in motor vehicle fees

and permitted the Highway Commission to sell its bonds at a rate not to exceed \$15,000,000 yearly. This increased revenue will provide \$23,000,000 annually.

West Virginia completed last year 658 miles of roads and 24 bridges costing \$15,800,000 and carried over uncompleted projects involving \$9,300,000 into this year. A balance of \$20,000,000 in state road bonds may be sold this year to provide for 800 miles of roads. Under the new state roads law passed by the Arkansas Legislature in 1923, the State expended \$9,000,000 last year and upwards of \$10,000,000 will be available this year for main arteries of travel in the State. Important bridges feature the improvement program in Georgia during 1924. On November 1 projects costing \$13,000,000 were under way. The 6000-mile system is constantly maintained by State forces. Florida in 1924 awarded contracts totaling \$4,400,000 and constructed 350 miles of roads. Expenditures for roads last year in Mississippi aggregated \$4,550,000. Work completed totaled \$6,000,000 and the value of construction carried over into this year approximated \$5,000,000.

Contracts awarded in Tennessee last year aggregated \$10,500,000 and plans have been adopted providing for continuation of the construction and maintenance program at an annual rate of expenditure of \$10,000,000. Last year Louisiana expended \$7,000,000 and completed 600 miles of all-weather highways. This year \$8,000,000 is available. North Carolina is



Project 40-A, Road 4, Brevard County, Between Sebastian and Melbourne. Rock Base with Priming Coat.

steadily advancing its big highway program and it is probable that a bond issue of \$35,000,000 will be authorized by the Legislature this year, bringing the total cost for this purpose to \$100,000,000. Last year \$21,000,000 was expended in that State in the construction of 1000 miles of highways, bringing the total mileage completed to 1891.

In Alabama a total of \$13,000,000 of \$25,000,000 road bonds have been sold and the remaining \$12,000,000 will be put into roads in 1925 and 1926. The Oklahoma State Highway Department in the first year of its reorganization shows construction under way valued at \$10,000,000, including 473 miles of highways and 19 bridges. The maintenance of 1700 miles of highway in thirty counties was taken over last year.

The State Highway Commission of Virginia let contracts in 1924 for 265 miles of roads and 8 bridges and carried over into 1925 construction on 422 miles of roads and on 16 bridges.—Manufacturers Record.

WINDSHIELD WISDOM

Do you know why your automatic windshield wiper runs slower, or perhaps stops momentarily, when you are climbing a steep hill in high gear? It is because with the throttle wide open and the engine running slower suction is reduced in the intake manifold, thus reducing the suction which operates the windshield wiper. If it is raining or snowing hard, and you need all the vision you can get, the wiper can be kept in motion by running up the hill in second gear. The chances are that you'll be safer running uphill that way under such weather conditions, anyway. Electric windshield wipers, of course, are not responsive to engine speeds or throttle conditions. Here your problem is to see that the battery is always up to par.—Illinois Motorist.

YOU MIGHT PASS THIS AROUND

If you work for a man—by all means work for him.

If he pays you wages that supply your bread and butter, work for him, speak well of him, stand by him and stand by the institution he represents.

If put to a pinch, an ounce of loyalty is worth more than a pound of cleverness.

If you must vilify, condemn, and eternally disparage, why, resign your job; and when you are outside, d— to your heart's content, but as long as you are a part of the organization don't condemn it; if you do, you are loosening the tendrils that hold you to it, and the first high wind that comes along you will be uprooted and disappear—probably never realizing the reason of your supposedly hard luck.—From "Dixie Doings," published by the Dixie Portland Cement Co., Chattanooga, Tenn.

The one-handed driver faces two dangers; arrest and matrimony.

A hog can't root and squeal at the same time. Likewise a man.

Not more than "45 minutes from Broadway" a concrete crew was laying a road through a New York village recently and in front of the home of an observant old lady, the reinforcing steel mesh was being put in place. The placing of the wire mesh greatly impressed her.

Later in the day, the old lady, in discussing the new pavement with one of the village trustees, said, "Now I know why concrete pavements are so easy to ride on. This morning I watched them lay the bed springs in the concrete."—The Highway Engineer and Contractor.

Asphalt Pavement of a New Type Gets Chicago Tryout

Kentucky rock asphalt is now being tried out in Chicago, a mile stretch on Washington boulevard, between Asland and Western Avenues, having been laid with it. This asphalt is laid just as it comes from the mines except that it is crushed. It is laid cold and is said to have many advantages, one meritorious feature is that it is not necessary to heat the rock asphalt in order for it to bond.

While this material is not new in road building and has been used by the bureau of streets for repair work, its extensive use is new to Chicago. The highway department of DuPage County has laid it in places for several years with such satisfactory results that rock asphalt will be used there in the future even in the building of State aid roads.

When first spread, rock asphalt has the appearance of ordinary black dirt. It is simply spread over the foundation and then pressed down by a steam roller, after which it is ready for light traffic.

Heavy trucks are kept off the pavement for several weeks after laying. Pavement made with rock asphalt becomes harder with use and it is claimed that it will not rut or "bleed" in hot weather. Another advantage claimed for it is that it is not high in cost, the Washington boulevard pavement, including the reshaping of the old macadam foundation, costing \$2.35 a square yard, as against \$4 and \$5 for other types of pavement.

Rock asphalt is a silica sandstone that contains about 7% asphalt and is mined about 30 miles from Bowling Green, Ky. It is supposed that ages ago the sandstone for miles around that locality became impregnated with petroleum from some by-gone oil pocket. Gradually the light oils evaporated, leaving the asphalt residue in the sandstone. It contains nearly the same proportion of asphalt as the artificially compounded material for paving and it has the advantage of being able to bond without heating.—The Highway Engineer and Contractor.

Wood Preservers Since 1878

Eppinger & Russell Co.

Main Office: 165 Broadway, New York
Branch Office: Buckman Building, Jacksonville, Fla.

CREOSOTED

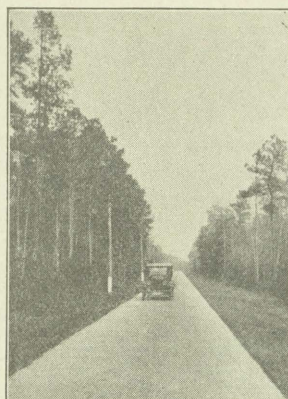
Forest Products of all kinds

Works at Jacksonville, Florida, and
Long Island City, New York

Capacity
100,000,000 Feet, Board Measure,
Per Annum

Also Manufacturers and Dealers in
Untreated Yellow Pine and Cypress
Products of All Kinds

Information and Quotations Cheerfully Given.
Address Nearest Office.



Snow Hill—Pocomoke Road
Pocomoke, Md. Built 1915
Elastite Expansion Joint Used

Roads That Outlast the Bond Issues

Many of the first concrete highways put into service are still carrying traffic. Many years after the bonds are retired, these roads will be returning a profit to the communities they serve.

Most of these successful concrete highways are adequately protected against expansion stresses and traffic-shock by Carey Elastite Expansion Joint.

Send for book, a complete treatise on expansion joint and its use in concrete construction.

THE PHILIP CAREY CO.

74 Wayne Ave., Lockland,

Cincinnati, Ohio

Carey Elastite

EXPANSION
JOINT
PROVED AND
ACCEPTED



Elastite Expansion Joint is an elastic resilient material composed of two sheets of asphalt-saturated felt between which is "sandwiched" a body of carefully refined asphaltic compound.

Trees By the Side of the Road

Returning travelers from Europe comment upon the trees along the roadside. With us a road was formerly a stretch of land over which it was permissible to travel—if you and your conveyance could make it through. More recently a road is a convenient ribbon of pavement from place to place with marking directions so that no man need go wrong. The threat we have to rid ourselves of is that a road shortly will become merely an intercity alley between two walls of billboards. But abroad a road is a delight to the eye as well as an invitation to the powered wheel. In France, for example, the contractor who agrees to build a section of road agrees also to plant the trees along it and to be responsible for them two years after the planting. Will America have to wait until it is as old as France before it learns the wisdom of encouraging trees? And yet France it is said, learned that wisdom as far back as the time of Francis I. And Francis was born two years after Columbus discovered America. Since that time, as fast as Americans, native and immigrant, have had opportunity we have been destroying trees instead of planting them, in order to make our highways.—Dallas News.

AMERICAN TAR PRODUCTS COMPANY

TAR-MAC

AND

REFINED ROAD TARs

Meeting State and Bureau of Public Roads
Specifications

FOR

CONSTRUCTION
SURFACE TREATMENT
MAINTENANCE

EXPERT ROAD SERVICES

COMPLETE LINE OF ROAD BUILDING
AND CONSTRUCTION EQUIPMENT

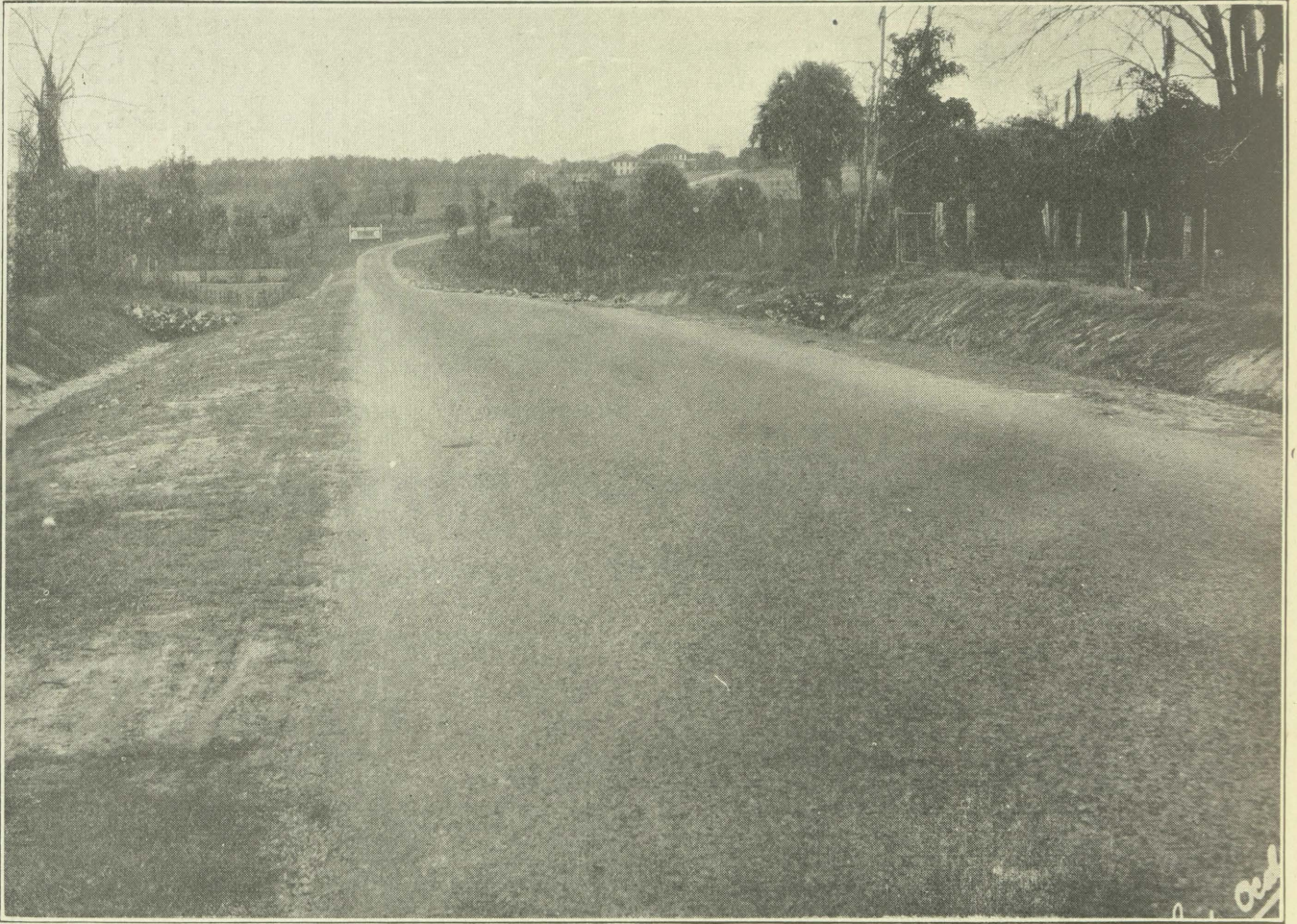
M. D. MOODY

Florida Distributor

402 Masonic Temple

Phone 2151

Jacksonville



Road 2 in Marion County near McIntosh. Rock Base Surface-treated.



The Cry for Good Roads is Universal



To what extent the progress of civilization today depends upon highways and motor vehicles is continually being impressed. From every corner of the earth comes the cry for roads—better roads—roads which will permit the continual and economical operation of the motor vehicle already in use and constantly enlarging possibility of motor vehicle operation with its innumerable benefits.

In an interesting article on conditions in Alaska in Scribner's, Mary Lee Davis of Fairbanks, Alaska, says:

"The future of the country as a white man's land depends upon roads, more roads, and yet more roads. We cannot get together as desperate units, we cannot develop the truest American citizenship until we have roads, upon which not only transportation, but agriculture, education, and industry in general more

and more depend. With adequate roads our mines and our farms alike will develop unaided. Roads will do away with farmers' wives and prospectors crazed by loneliness and dark. They are paths to school and market, church and court, and every other symbol of man's communal effort."

There is her picture of the situation in Alaska. But how well it applies also to any other portion of the earth's surface. How recently we awakened to the important truth contained in that paragraph even here in "the states." And the following applies pretty well even yet in many sections of the Union: "We in Fairbanks have very fair auto roads that light cars travel with ease in Summer and Winter; but there are times in the Spring and Fall when local travel almost ceases, for frost neither goes nor comes without leaving its devastation upon the highways."—The Lincoln Highway Forum.

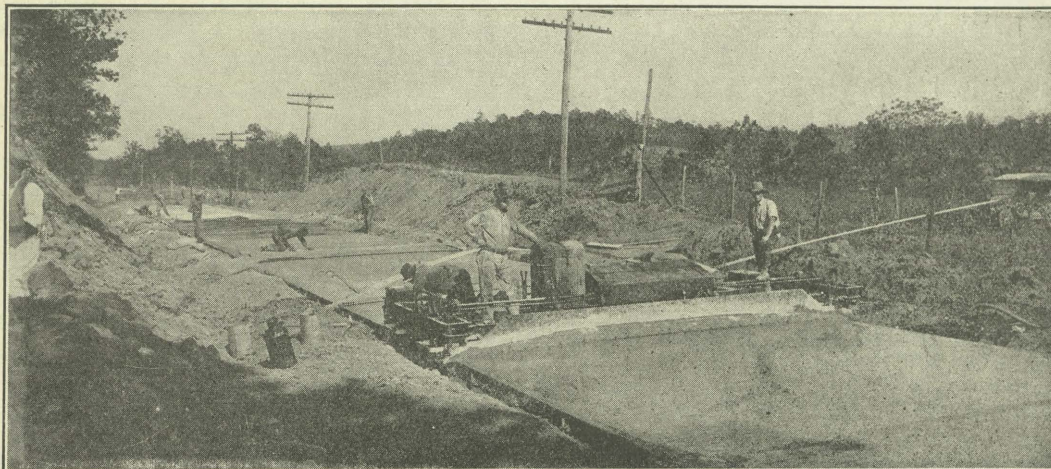


Photo shows F. A. P. 100A—17½ miles Slag Concrete paving in Chilton County on Birmingham-Montgomery highway: J. R. & J. B. Miller, Baconton, Ga., contractors.

This 17½ Mile Concrete Paving on the Birmingham-Montgomery Highway Tests 4,633 lbs. per Square Inch

In planning this project the Alabama Highway Dept. employed the Southern Testing Laboratory (Birmingham) to design a mix using not more than 1.75 bbls. cement, approximately two parts washed sand and three parts

"ENSLEY" & "ALA CITY"
BASIC SLAG
CRUSHED & SCREENED

that would produce 3,000 lbs. per sq. inch concrete.

7
miles
just like
this

[F. A. P. 147]

are being laid on the same highway in Jefferson County by Newell Contracting Co., Birmingham. About 1,000,000 sq. yds. Slag Concrete pavement have been laid in the Southeast in recent years.

The results obtained by using the design mix (1-2.27-3.3) have established a new standard of strength. Twenty eight day cylinders taken in the field from the 6 miles of this road now completed exceed 4000 lbs. The average for all cylinders was 4633 lbs. per sq. inch. Some went as high as 6271 lbs.

Another striking fact revealed by the daily tests, is that while this designed Basic Slag mix produces concrete of greater strength, it requires LESS cement (1.65 bbls. per cu. yd. of concrete.) This means a saving to the Highway Department of one tenth of a barrel per cu. yd. of concrete (amounting to 3251 bbls.) as the State is furnishing all the cement required in this 17½ mile project.

BIRMINGHAM SLAG CO.

Slag Headquarters for the South

ATLANTA THOMASVILLE BIRMINGHAM MONTGOMERY ORLANDO

TRANSACTIONS STATE ROAD DEPARTMENT AT ITS QUARTELY MEETING HELD IN TALLAHASSEE

(Continued from Page Three)

Township eighteen (18) south, Range nineteen (19) east, and running northwesterly through Lots seventy-one (71), seventy-two (72) and seventy-three (73) to the approximate center of the north line of Lot seventy-three (73) according to the map of State Road Number 5 on file in the office of the Clerk of the Circuit Court of Citrus County, Florida, containing 0.165 acres, more or less.

Be it further Resolved, That the County Commissioners of Citrus County are authorized to make payment of the above said sum of three hundred dollars (\$300.00) for a right-of-way for this Department.

Be it further Resolved, That in the event said right-of-way cannot be immediately obtained by purchase for the above said sum, that condemnation proceedings be commenced at once, which said proceedings shall be maintained in the name of the State Road Department.

Road No. 1—Tallahassee-Quincy

Upon motion of Mr. Corry, seconded by Mr. Green, the following resolution was adopted:

Whereas, The Federal Bureau of Public Roads has investigated the question of routing State Road No. 1 between Tallahassee and Quincy, Florida; and in an exhaustive report has recommended the adoption of the southern line, more commonly called the Midway route and setting forth all of the facts, reaches this conclusion primarily because it involves the shortest mileage; and

Whereas, The last Legislature in enacting the law designating the State Road System provided that Road No. 1 should run from Quincy to Tallahassee via Havana, thus setting up a conflict between the State and Federal requirements, and while this Department realizes fully the importance of completing Road No. 1 at the earliest possible date, it also appreciates the fact that it cannot ignore the recommendation of the Federal Bureau of Public Roads in building the roads embraced in the Florida Seven Percent System; therefore, be it

Resolved, That all work on Road No. 1 between Quincy and Tallahassee be deferred until the 1925 session of the Legislature when this question and others of a similar nature can be corrected by proper amendatory legislation.

Taylor County—Road No. 19

Upon motion of Mr. Hillman, seconded by Mr. Green, the following resolution was adopted:

Whereas, It appears to this Department that in order to prevent stoppage of travel over State Road No. 19, which road is under the jurisdiction of the State Road Department, it is necessary as emergency work, that a bridge be constructed across the Steinhatchee river between Taylor and Dixie Counties; and

Whereas, Taylor County has provided sufficient piling for the erection of a pile trestle across said stream and said county has agreed to furnish such labor as will be necessary to construct said bridge; Now, therefore, be it

Resolved, That this Department hereby agrees to furnish f. o. b. nearest railroad siding such creosoted lumber as will be necessary to construct a timber bridge according to the specifications of the State Road Department; and the Department further agrees to reimburse Taylor County for the timber piling delivered at such bridge site at the actual cost of same to the county; Provided, Taylor County will transport the creosoted lumber from the siding to the bridge site and erect the bridge with its own labor and equipment, according to the plans and specifications of this Department.

Requirements for Rights-of-Way for All State Roads

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Resolved, That it is the sense of this Department that hereafter no contract will be let nor work commenced on any portion of any State road until the necessary conveyances covering the rights-of-way for such portion of said road shall have been first furnished or secured.

Tentative Budget, 1925

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Resolved, That the proposed budget of construction and maintenance as prepared by the members of the Department, and on file in the office of the Department, be and the same is hereby tentatively adopted.

Budget Meeting

Upon motion of Mr. Green, seconded by Captain Hillman, the following resolution was adopted:

Resolved, That Tuesday, March 10th, 1925, be fixed and designated as the time and Miami, Florida, as the place for a public hearing as to the proposed budget of work, at which time and place the Department will hear all complaints and suggestions offered by the public as to any changes desired in said budget.

Expense Accounts

Upon motion, duly carried, the expense accounts of the members were approved and authorized to be paid.

There being no further business the Department adjourned.

ESTIMATED RESOURCES OF STATE ROAD DEPARTMENT FOR YEAR 1925

| | | |
|--|----------------|--------------|
| Balance on hand January 1, 1925..... | \$ 445,803.52 | |
| State Road Tax Fund..... | \$ 450,000.00 | |
| Gasoline Tax Fund..... | 2,700,000.00 | |
| Gasoline Inspection Fund..... | 175,000.00 | |
| Auto License Fund..... | 1,750,000.00 | |
| Auto Title Registration Fund | 50,000.00 | |
| Federal Aid Fund..... | 2,831,469.42 | |
| Due from counties for work done | 224,010.61 | 8,180,480.03 |
| Total estimated resources for year 1925 | \$8,626,283.55 | |
| 10% Reserve for Emergency Work..... | 862,628.35 | |
| Net Estimated Resources Available for Road Construction and Maintenance..... | \$7,763,655.20 | |



**WASHED
ARROWHEAD
GRAVEL
AND
SAND**

**Protect yourself
against delays**

Delays tie up men and machines—retard progress—eat up profits! Protect yourself. You can. On that next job write

Arrowhead aggregates into your specifications. Products of an electrically operated plant: capacity, 4000 tons a day. Washed, screened, sized to meet exacting Federal Aid Specifications—and your own.

**4000
TONS
A
DAY**

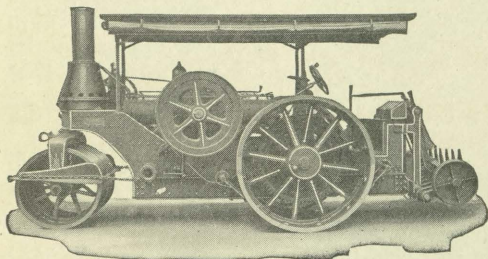
MONTGOMERY GRAVEL CO.

Office: Shepherd Bldg.
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BRANCH OFFICES:
Birmingham, Atlanta,
Thomasville, Orlando

BUFFALO-SPRINGFIELD ROLLERS

The choice of experienced
engineers and contractors



Furnished in all weights and types—
motor and steam propelled.
Inquiries Invited.



The Buffalo Springfield Roller Co.
Springfield, Ohio.



Jacksonville Agent
M. D. Moody, 402 Masonic Temple

*Permanent
roads are a
good investment
—not an expense*

The High Cost of Postponing Permanent Highway Building

Poor motor roads stifle industry and agriculture, waste huge sums annually in high maintenance costs, and greatly increase gasoline, tire and repair bills.

There is not a state, not a county, not a community, that isn't paying a heavy price for having too few permanent roads.

There are still many sections of the country—even whole states—that are trying to operate twentieth century traffic over nineteenth century roads.

This is costing millions of dollars every year, and will keep on costing millions until we have well developed permanent highway systems everywhere.

Even what we often call the more progressive communities are far behind the demands of modern highway traffic with its 16,000,000 motor vehicles.

From the Atlantic to the Pacific, and from Canada to Mexico, we need more Concrete roads—the roads for twentieth century traffic.

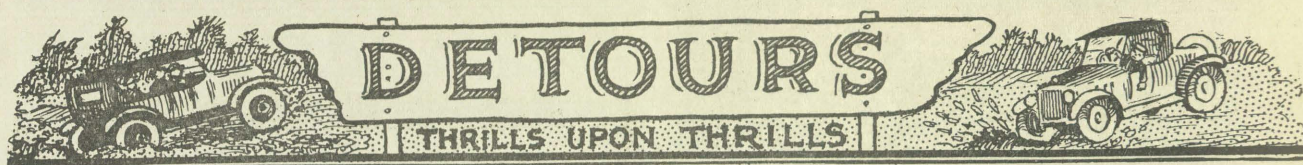
Your highway officials want to be of the greatest possible service to you. Get behind them with ways and means that will provide more Concrete roads and streets. Such an investment will pay you big dividends year after year.

PORTLAND CEMENT ASSOCIATION

Graham Building
JACKSONVILLE, FLA.

*A National Organization to Improve and
Extend the Uses of Concrete*

OFFICES IN 29 CITIES



Staggering Thought

"What would a nation be without women?"
 "A stagnation, I guess."—Mercury.

Not So Changed

"Has Meyer changed much in the years he has been away?"

"No, but he thinks he has."

"How so?"

"Why, he is always talking about what a fool he used to be!"—Nagel's Lustige Welt (Berlin).

Tardy

Professor (to Freshman entering class late):
 "When were you born?"

Freshman: "On the second of April."

Professor: "Late again."—The DePauw Daily.

Such a Comedown

St. Peter: "That new arrival seems disappointed in heaven."

Gabriel: "He is. He'd just finished reading a real estate agent's prospectus of a new residence tract when his flivver ran over an embankment."—The American Legion Weekly.

Ave Atque Vale

Shed a tear

For little Nell

She had a car

And drove pretty fast.

—Tennessee Tar.

Two Drawbacks

First Girl in Elevator: "Miss S—is a nice girl, but rather loquacious."

Second Girl in Elevator: "Yes; and besides that, she talks too much."—Albany Evening Journal.

Appropriate

She: "It's very good of you to ask me to dance."

He: "Don't mention it, it's a charity ball."—Jack o' Lantern.

Literarily Speaking

"Did the doctor remove your appendix?"

"Feels to me like he removed my whole table of contents."—Octopus.

Crashed

There was a young lady named Eleanor,
 Whose auto turned over and feleanor;

'Twas ten minutes or so

Ere she seemed to know

The things that the people were teleanor.

—Texas Highway Bulletin.

Better wait one minute at a crossing than forever in a cemetery.—Texas Highway Bulletin.

"Does a rabbit's foot really bring good luck?"

"I should say so. My wife felt one in my money pocket once and thought it was a mouse."

"You say you come from Detroit," said the doctor to his fellow passenger; "that's where they make automobiles, isn't it?"

"Sure," replied the American with some resentment. "We make other things in Detroit, too."

"Yes, I know," retorted the doctor; "I've ridden in 'em."

Steppe By Steppe

A Russian was being led off to execution by a squad of Bolshevik soldiers on a rainy morning.

"What brutes you Bolsheviks are," grumbled the doomed one, "to march me through a rain like this."

"How about us?" retorted one of the squad. "We have to march back."—The Pointer.

Definition of Modern Term

A parking space is where you leave the car to have the tail-light knocked off.—Memphis News Scimitar.

It Killed a Cat

Rastus—"Wheah you-all bin?"

Finney—"Lookin' foah work."

"Man! Man! Yoah cu'osity gonna git you into trouble yit!"

We Don't Guess

A Chinese newspaper contains this letter from an applicant for work:

"Sir,—I am Wang. . . . I can drive a type-writer with good noise and my English is great. . . .

My last job has left itself from me, for the good reason that the large man has dead. It was on account of no fault of mine. So, honorable sirs, what about it. If I can be of big use to you, I will arrive on some date that you should guess."

Some motorists approach railroad crossings as if they thought the stop-look-listen sign was meant for the locomotive engineer.

"One more filling station, gentlemen," announced the president of the board of selectmen happily, "and the village will be able to remove all the lamp-posts on Main Street."

"Why don't men have dens any more?"

"Because they have to spend all their spare time in the garage, and like it better."—St. Louis Globe-Democrat.

The difference between opportunity and a motor is that opportunity knocks but once.—American Legion Weekly.

Power of Suggestion

Aunt Mandy kept her house spotless, consequently poor Sambo was constantly being nagged about his untidy habits.

One day Sambo came home to find that Mandy had presented him twins. He viewed this as something of a calamity and said rather mournfully: "Mandy, I've done cautioned you time an' again to let dat ole Gold Dust stuff alone—now, ah reckons you'll listen to me some heahaftah."—Good Hardware.

Vice Versa

"Were you hurt while on the eleven?"

"No, while the eleven were on me."—Purple Cow.

Wise, Too

Dumb: "You certainly sling a terrible lingo. You ought to go to London and learn the King's English."

Dumber—"Oh, I know he's English."—Sour Owl.

The Widening Field

Three chimpanzees are taking important parts in a new film. After this more people than ever will be justified in thinking that they have a film face.—The Humorist.

In spite of the lack of roads and tremendous obstacles to transportation of gasoline, oil and tires, automobiles have finally succeeded in penetrating the heart of the African jungle. The machines are operated by government agencies along the Gold Coast.—Highways and Motors.

Ocala Lime Rock—Florida's Natural Road Material

E. W. ELLIS, President. C. G. ROSE, Sec'y-Treas.

Ocala Lime Rock Co.

INCORPORATED

OCALA, FLORIDA

LIME ROCK QUARRIES

Kendrick, on A. C. L. R. R. Santos, on S. A. L. R. R.

Daily Capacity Plants, 3,000 Tons.

Office: Jones Building,
Ocala.

Telegraph: Ocala. Phone 264.

**INSTALLED
1912**

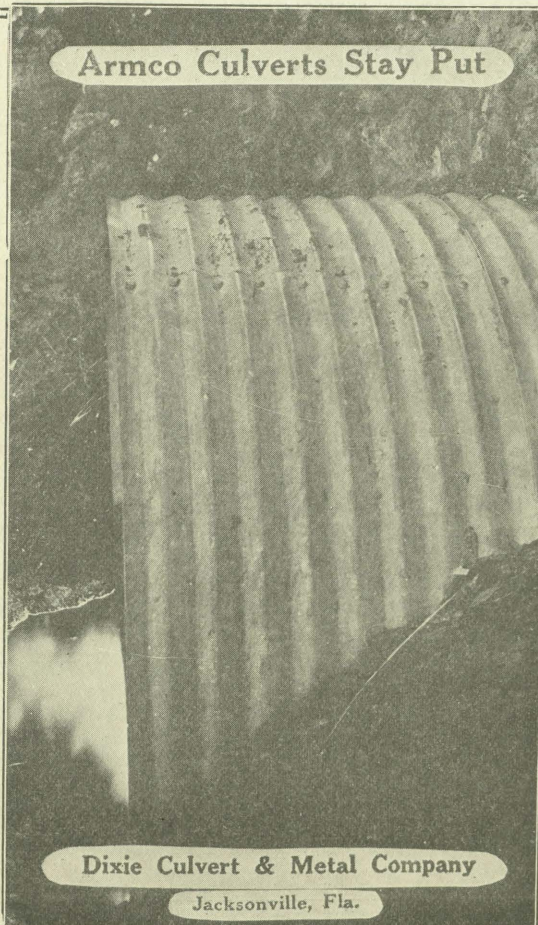
UNRETOUCHED

"CLOSE-UP"
of 60-inch ARMCO 52
feet long

CITY OF
**DAYTONA,
FLORIDA**



Armco Culverts Stay Put



Dixie Culvert & Metal Company

Jacksonville, Fla.

**INSPECTED
1923**

Condition Pronounced
EXCELLENT

By

W. R. BABINGTON,
Superintendent Streets,

in September, 1923, after
cleaning out a few inches
of sand



Status of Road Construction

THROUGH DECEMBER 31, 1924

| Project No. | Contractor | Road No. | County | Total Length Miles | Clearing Miles | Grading Miles | Base Miles | Surface Miles | Per Cent Type Complete |
|-------------|-----------------------------|----------|-------------------|--------------------|----------------|---------------|------------|---------------|------------------------|
| 26 | C. F. Lytle..... | 2 | Columbia | 11.01 | | | | 0.00 | C. 0.00 |
| 37-D | Fla. Drainage & Const. Co.. | 2 | Alachua | 2.14 | 0.00 | .59 | | | G. 30.00 |
| 40-A | C. F. Lytle..... | 4 | Brevard | 16.17 | 15.36 | 9.70 | 7.27 | | R.(S.T.) 48.00 |
| 40-D | J. Y. Wilson..... | 4 | Brevard | 6.72 | 6.72 | 6.38 | 4.03 | | R.(S.T.) 70.00 |
| 40-E | Langston Const. Co..... | 4 | Brevard | 13.60 | 13.60 | 13.50 | 8.64 | | R.(S.T.) 78.00 |
| 43 | Wm. P. McDonald Const Co. | 2 | Marion | 10.44 | 9.92 | 5.32 | 0.00 | 0.00 | S.A. 1.50 |
| 44 | Southern Paving Const. Co. | 2 | Lake | 10.53 | 10.53 | 9.47 | 7.47 | 2.10 | B.M. 51.32 |
| 514 | State Forces | 1 | Jackson | 11.00 | 0.00 | 0.00 | | 0.00 | S.C. 0.00 |
| 521 | Morgan-Hill Paving Co.... | 4 | Nassau | 12.41 | 12.41 | 12.41 | 10.79 | | R.(S.T.) 92.00 |
| 534-A | J. D. Donahoo & Sons..... | 24 | Brevard | 2.65 | 2.65 | 2.12 | 0.00 | | R.(S.T.) 80.00 |
| 534-B | Noll & Noll..... | 24 | Brevard | 11.85 | 11.85 | 11.85 | 7.58 | 0.00 | R.(S.T.) 62.00 |
| 564-A | Broadbent Const. Co. | 5 | Charlotte | 10.88 | 10.88 | 10.88 | 0.00 | 0.00 | R.(S.T.) 35.00 |
| 564-B | Boone & Wester..... | 5 | Charlotte | 9.86 | 9.86 | 9.86 | | 2.96 | Marl 85.00 |
| 567 | State Forces | 1 | Walton | 21.35 | 13.87 | 6.40 | | 2.37 | S.C. 28.80 |
| 571 | Hunter & Gladwell..... | 1 | Madison | 14.73 | 14.73 | 14.29 | | 6.63 | S.C. 87.00 |
| 574 | Duval Engr. & Const. Co.. | 9 | Madison | 11.66 | 11.66 | 11.66 | 0.00 | 0.00 | R.(S.T.) 84.00 |
| 576 | S. T. Buchanan & Sons..... | 5 | Sarasota | 5.68 | 5.68 | 5.22 | | | G. 72.00 |
| 576 | Broadbent & Groeting..... | 5 | Sarasota | 5.68 | | | 0.00 | 0.00 | R.(S.T.) 0.00 |
| 586 | State Forces | 1 | Jackson-Wash'ton | 17.37 | 10.42 | 6.94 | | 5.21 | S.C. 60.80 |
| 588 | Morgan-Hill Paving Co.... | 3 | Putnam | 2.34 | 0.00 | 0.00 | 0.00 | 0.00 | S.A. 0.00 |
| 597 | J. Y. Wilson..... | 4 | Volusia | 16.29 | 15.20 | 10.75 | 0.00 | | R.(S.T.) 23.00 |
| 598-A | W. J. Bryson Paving Co.... | 1 | Jefferson | 9.45 | 9.45 | 9.45 | | 3.31 | S.C. 95.00 |
| 598-B | State Forces | 1 | Jefferson | 7.80 | 7.80 | 6.63 | | 5.46 | S.C. 80.00 |
| 599 | M. M. Boyd..... | 2 | DeSoto-Charlotte. | 7.40 | 7.40 | 7.35 | | 6.29 | Marl 75.00 |
| 604 | C. F. Lytle..... | 4 | Volusia | 7.72 | 4.81 | 3.12 | 0.00 | | R.(S.T.) 26.00 |
| 607-B | State Forces | 13 | Clay | 5.68 | 5.68 | 4.82 | 0.00 | | R.(S.T.) 15.80 |
| 608 | State Forces | 4 | Brevard | 9.25 | 7.20 | 6.47 | | | G. 60.00 |
| 608 | C. F. Lytle..... | 4 | Brevard | 9.25 | | | 0.00 | 0.00 | Conc. 0.00 |
| 612 | State Forces | 1 | Leon | 17.58 | 15.82 | 7.91 | | 0.00 | S.C. 36.00 |
| 613 | State Forces | 5 | Sarasota | 4.62 | 4.62 | .55 | 0.00 | 0.00 | R.(S.T.) 2.00 |
| 621 | State Forces | 1 | Okaloosa | 15.17 | 0.00 | 0.00 | | 0.00 | S.C. 0.00 |
| 623 | State Forces | 35 | Madison | 12.32 | 3.81 | 2.71 | | 0.00 | S.C. 14.00 |
| 627 | State Forces | 2 | Putnam | 3.704 | 2.22 | .11 | | | R.(S.T.) 2.00 |
| 628-D | State Forces | 3 | Volusia | 6.47 | 5.82 | 3.23 | 0.00 | | R.(S.T.) 17.10 |
| 630 | Myers Construction Co.... | 8 | Highlands | 11.00 | | | .55 | 0.00 | R.(S.T.) 5.00 |
| 633 | State Forces | 1 | Gadsden | 9.607 | 0.00 | 0.00 | | 0.00 | S.C. 0.00 |
| 634 | State Forces | 1 | Jackson | 11.07 | 4.65 | 2.76 | | .77 | S.C. 27.30 |
| 636 | C. F. Lytle | 8 | St. Lucie | 12.20 | 0.00 | 0.00 | 0.00 | 0.00 | R.(S.T.) 0.00 |
| 637 | State Forces | 10 | Leon | 18.00 | 0.00 | 0.00 | 0.00 | 0.00 | S.C. 0.00 |
| 639 | State Forces | 1 | Gadsden | 9.84 | 0.00 | 0.00 | | 0.00 | S.C. 0.00 |
| 646 | Newell Contr. Co..... | 10 | Franklin | 18.50 | 0.00 | 0.00 | | 0.00 | S.C. 0.00 |

TOTAL MILES COMPLETE

| | Concrete | Brick | B.C. | S.A. | B.M. | Asp. | Blk | S.T. | S.C. | Marl | Grad. | Total |
|----------------------------------|----------|-------|------|-------|-----------------|-------|---------------|--------|------------|-------|----------------|--------|
| Complete December 31, 1924.... | 107.61 | 12.44 | 5.62 | 42.23 | 71.50 | 23.20 | 249.12 | 303.26 | 36.72 | 20.06 | | 881.77 |
| | | | | | Clearing Miles. | | Graded Miles. | | Base Miles | | Surface Miles. | |
| Complete December 31, 1924 | | | | | 1,002.40 | | 950.23 | | 326.85 | | 861.71 | |

Note—The above tabulation shows only those projects that are actually under construction at the present time and does not show projects that have been previously completed. However, the table, "Total miles completed," at the foot includes all projects that have been completed prior to December 31, 1924, and the amount completed in December also. The abbreviations used are as follows:

C.—Concrete. S.A.—Sheet asphalt. B.M.—Bituminous macadam. R.—Rock base. S.C.—Sand clay. G. & D.—Graded and drained. S.T.—Surface treated. B.C.—Bituminous concrete.

Southern Surety Company

of Des Moines

Contractors' Bid and Performance Bonds

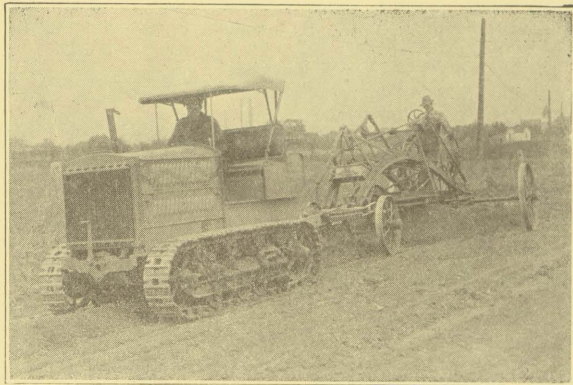
Agents throughout Florida.

Surety requests expeditiously
handled by

Harry F. Fromme & Co.

General Agents

Jacksonville and Tampa
Florida



Consider the Grader

The ultimate success or failure of practically every road, regardless of the type of surface, rests with the construction of the subgrade. Improvements in machines, methods and materials may come and go, but the fact remains that the highest type of pavement will fail if the subgrade is faulty, either in design or construction.

Included in the long list of Austin-Western Graders and Grader-Scarifiers there is bound to be a model as good as made to order for your own particular requirements; no matter whether you need a machine that will build a new grade through the roughest kind of country; one that will tear up an old, hard-as-sin roadbed preparatory to laying a new surface; or one for some of the many other kinds of work on which a grader is needed.

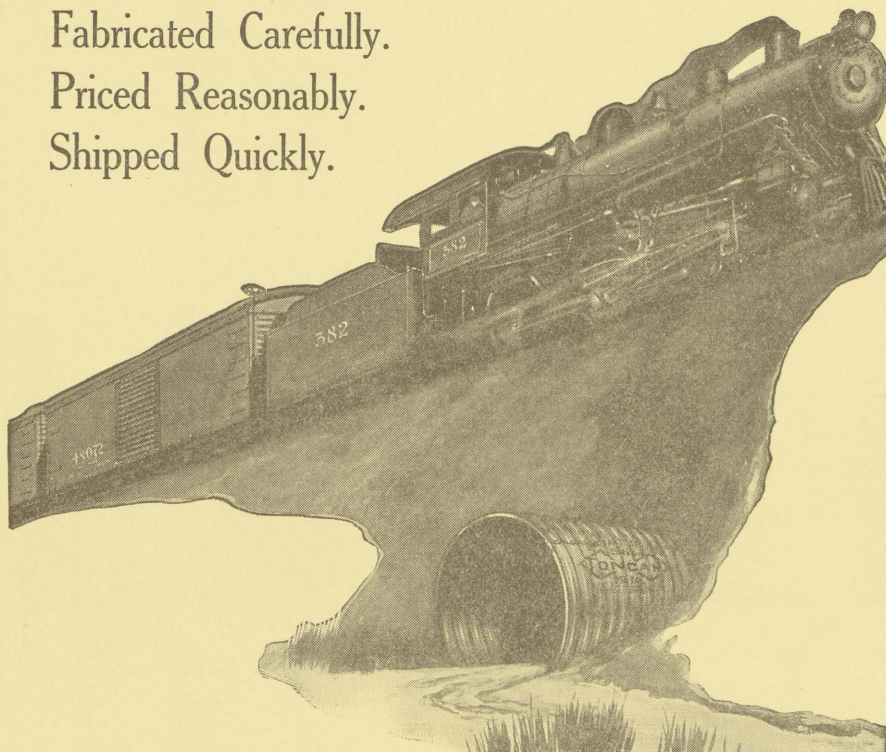
The Austin-Western Road Machinery Co.

General Offices:

400 North Michigan Ave., Chicago, Ill.



Fabricated Carefully.
Priced Reasonably.
Shipped Quickly.



THE BERGER MANUFACTURING CO.

Formerly THE FLORIDA METAL PRODUCTS CO.

JACKSONVILLE, FLA.

"The

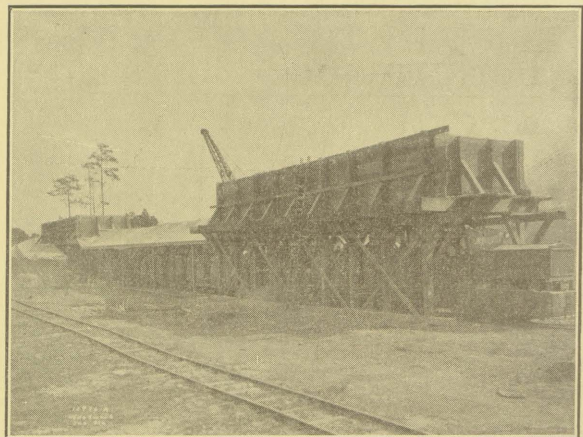
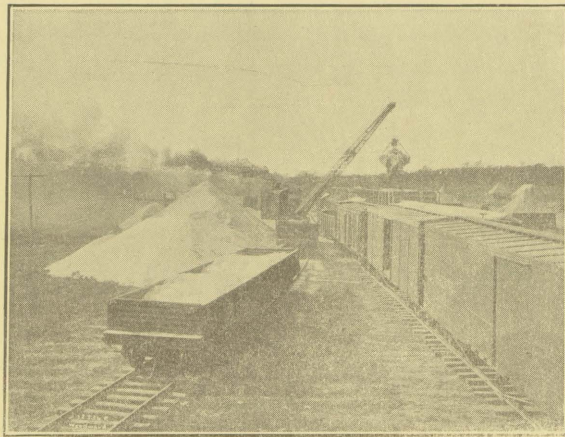
ORGANIZATION

Lytle

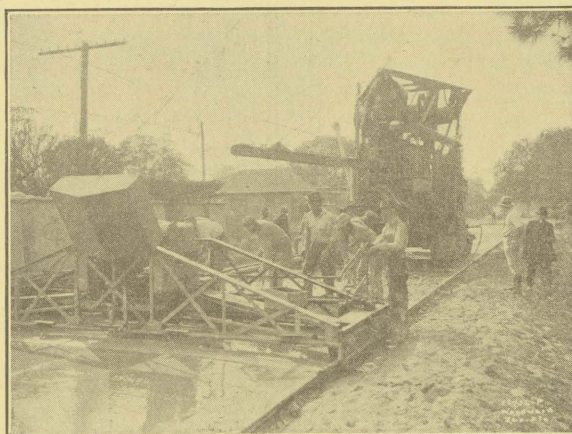
SYSTEM

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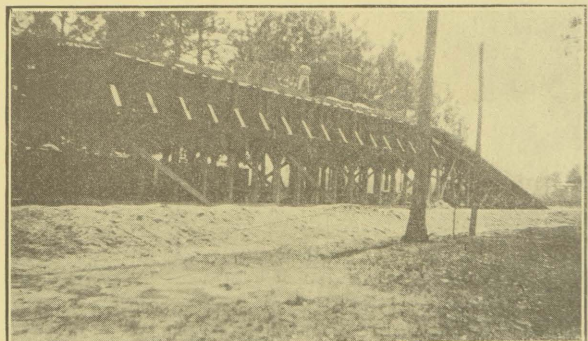
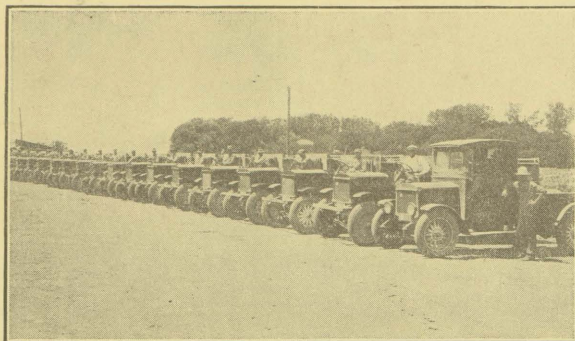
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